

SOAP

and

SANITARY CHEMICALS



Old road...

- Today, as in years gone by, the same old road leads to sales success, the road of knowledge and experience.
- Sales-building perfumes by UNGERER have been the choice of many successful manufacturers for more than half a century.
- Whether essential oils, aromatic chemicals, or perfume specialties, UNGERER'S wide knowledge and experience can make them serve your product better. For sales-building perfumes... consult UNGERER!

UNGERER & COMPANY

161 Avenue of the Americas, New York



May 1946

Newly Developed AROMATIC CHEMICALS

*The new odor successes
in the perfume and cosmetic
field will be based on these.*

CUIRUSAL

Powerful aldehyde useful in floral and many fancy bouquets.

AMBRIOL

Deep rich aroma of Ambrette Seed Oil.

RESEDALIA

A chemical surprisingly true to the odor of Reseda Mignonette.

TUBEROL

Basis for Tuberose odors and perfumes for creams, lotions, etc.

VIOLETTONE

A Ketone basis for Violet Odors with Patchouly note.

JASMINOL

Similar in odor to Alpha Amyl Cinnamic Aldehyde but softer and finer.
Stable in soaps and creams. Basis for Jasmin Odors.

ALDEHYDE FK

Basis for Lilacs to create richer, stronger Lilac Odor.

Add up to 10% Aldehyde FK.

ETHYLENE GLYCOL ACETAL OF PHENYL ACET ALDEHYDE

Softener and homogenizer for all types of Floral Odors.

These are a few of our recently developed products. Write for complete list.

CYCLAMAL An aldehyde replacing Hydroxy Citronellal. Five times stronger. Economical to you.

Aromatics Division
GENERAL DRUG COMPANY
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Now! FULD Insecticides with D.D.T.*

Fuld brings you powerful D.D.T. insecticides for domestic and industrial use. Write or wire today for samples of Fuld special formulations involving D.D.T.

- Super Fuldeth Insecticide, Grade AA, 5 per cent D.D.T.
- Fuldeth DX Insecticide, Grade AA, 2 1/2 per cent D.D.T.
- Vaporizing Spray, 2 1/2 per cent D.D.T.
- Restix Residual Action Water Emulsion Spray, 25 per cent D.D.T.
- Restal Residual Action Water Emulsion Spray, 5 per cent D.D.T.
- Restone Residual Action Petroleum Solvent D.D.T. Spray.
- Bee Bee Dairy Livestock and Cattle Spray, 25 per cent D.D.T. Water emulsion type for use in control of horn flies on dairy and range cattle, lice on cattle, horses, mules, hogs and goats, and ticks on sheep.

*Licensed under Pat. No. 2,329,074

702 South Wolfe Street, Baltimore 31, Md.
2444 East 8th Street, Los Angeles 21, Calif.
New York Sales Office: 55 West 42nd Street

D. D. T. POWDERS

S.F.P. Roach Powder. Kills roaches, ants, and fleas. 10% D.D.T. with Sodium Fluoride and Activated Pyrethrum. Available in 2 oz. Duster Guns, 1 lb. Sprinkle Top Cans, 5 lbs., and bulk.

Super Dushane Insecticide Powder. 10% D.D.T. with Activated Pyrethrum. Kills roaches, waterbugs, fleas, ants, bedbugs, lice, etc. 8 oz. equals 1 lb. of conventional Sodium Fluoride-Pyrethrum Roach Powder. Available in 8 oz. Duster Guns, 8 oz. Sprinkle Top Cans, 3 oz. containers, 5 lb. containers and bulk.

Fuld
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Liquid Soaps, Floor Seals, Floor Treatments, Deodorant Blocks, Liquid Deodorants, Plumbing Specialties, Special Cleaners, Self-Polishing Waxes, Powdered Waxes, Oil Soaps, Liquid Cleaners, Disinfectants, Insecticides, Metal Polishes, Furniture Polishes, Deodorant Block Holders, Soap Dispensers.

May, 1946

Say you saw it in SOAP!

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3

Monsanto phosphorus and related products

Phosphorus (Yellow)	Ammonium Phosphates
Phosphoric Anhydride	Calcium Phosphates (Mono-Di-Tri)
Phosphoric Acid-Tetra	Calcium Pyrophosphate
Phosphoric Acid—85%	Potassium Phosphates
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Disodium Phosphate (Anhydrous and Dodehydrate)	Iron Orthophosphate
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Monsanto phosphorus better
than 99.9% purity

Better than 99.9% pure phosphorus

Monsanto phosphoric acids and phosphates exhibit a uniformly high quality that is supported by the near-absolute purity of Monsanto's elemental phosphorus — better than 99.9%. Because of this, many industries look to Monsanto as their prime source of supply.

Since Monsanto is the world's largest commercial producer of elemental phosphorus,



it follows that the value of its experience with phosphorus and its derivatives is often of great value. Users are invited to contact the nearest Monsanto Office, or write MONSANTO CHEMICAL COMPANY, Phosphates Division, 1700 South Second Street, St. Louis 4, Mo. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Cincinnati, Birmingham, Los Angeles, San Francisco, Seattle, Montreal, Toronto.

SOAP

and

SANITARY CHEMICALS

Volume XXII

Number 5

May, 1946

CONTENTS

Editorials	35
Lecithin in Soap.....	37
By Milton Lesser	
Consider Soap Quota Boost.....	41
Potash Soaps vs. Synthetic Detergents.....	43
By Herbert Kranich	
Synthetic Detergents in the Modern Tannery.....	46
By Paul I. Smith	
Lined Drums for Shipping Soaps.....	71
By Dr. L. H. Ott	
New Fungicide	126
By Frank Owens	
Roach Powders	131
By R. B. Schwitzgebel	
Aerosol Formulation	135
By Arthur W. Lindquist, B. V. Travis, A. H. Madden and Howard A. Jones	
New Trademarks	57
Bids and Awards	61
Raw Material Markets	63
Production Clinic	75
Products and Processes	81
New Patents	83
Sanitary Products Section	91
Technical Briefs	147
Classified Advertising	173
Advertisers' Index	179

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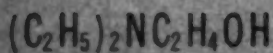
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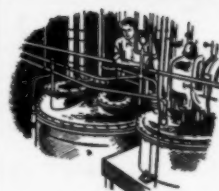
3 ethanolamines...

Diethylethanolamine



...is used chiefly in the syntheses of anti-spasmodics, anti-malarials, and pain-relieving pharmaceuticals. Its fatty esters are of particular value as emulsifying agents for waxes and oils to be applied under acidic conditions, as in the case of textile waterproofing compounds. These oil-soluble esters can be used in inks and paints as surface-active materials and may have value as rust inhibitors in petroleum products.

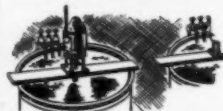
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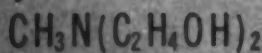
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and
further
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...is an intermediate in the synthesis of compounds used as corrosion inhibitors, anesthetics, acetate rayon dyestuffs, and textile auxiliaries and lubricants. Dimethylethanolamine forms highly surface-active esters which are well suited to cationic flotation processes. It is also valuable itself as a corrosion inhibitor in return condensate low-pressure steam systems.

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...is an intermediate in the manufacture of resins, pharmaceuticals, insecticide intermediates, emulsifying agents, and textile agents and dyestuffs. Methyldiethanolamine is a tertiary amine with two highly active hydroxyl groups and is a valuable product for the preparation of a wide variety of compounds.

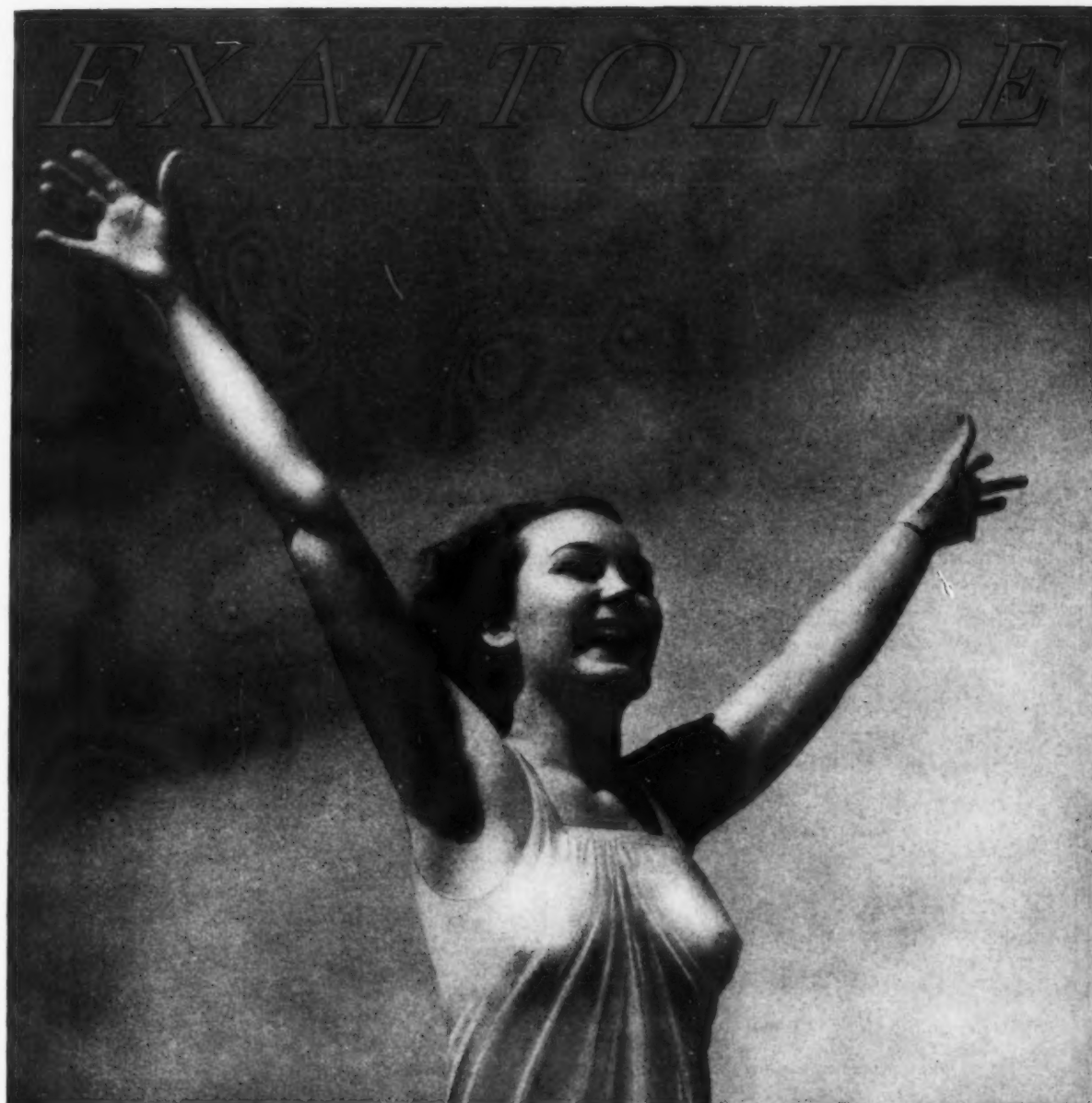
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Unit of Union Carbide and Carbon Corporation



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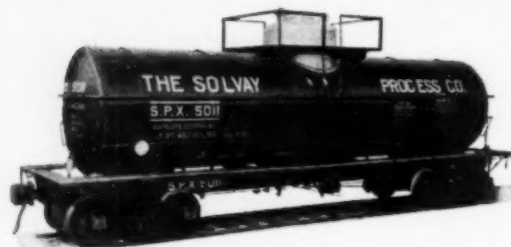
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49-50% LIQUID in tank cars

45% LIQUID in drums

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Solvay Caustic Potash liquid is low in turbidity. Shipped in tank cars, Solvay Caustic Potash liquid contains 49-50% Potassium Hydroxide. In drums, this clear liquor contains 45% KOH

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**Chemically classified as an alkylaminosulphate.*

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Your Product Deserves the Protection of a Rheem Container



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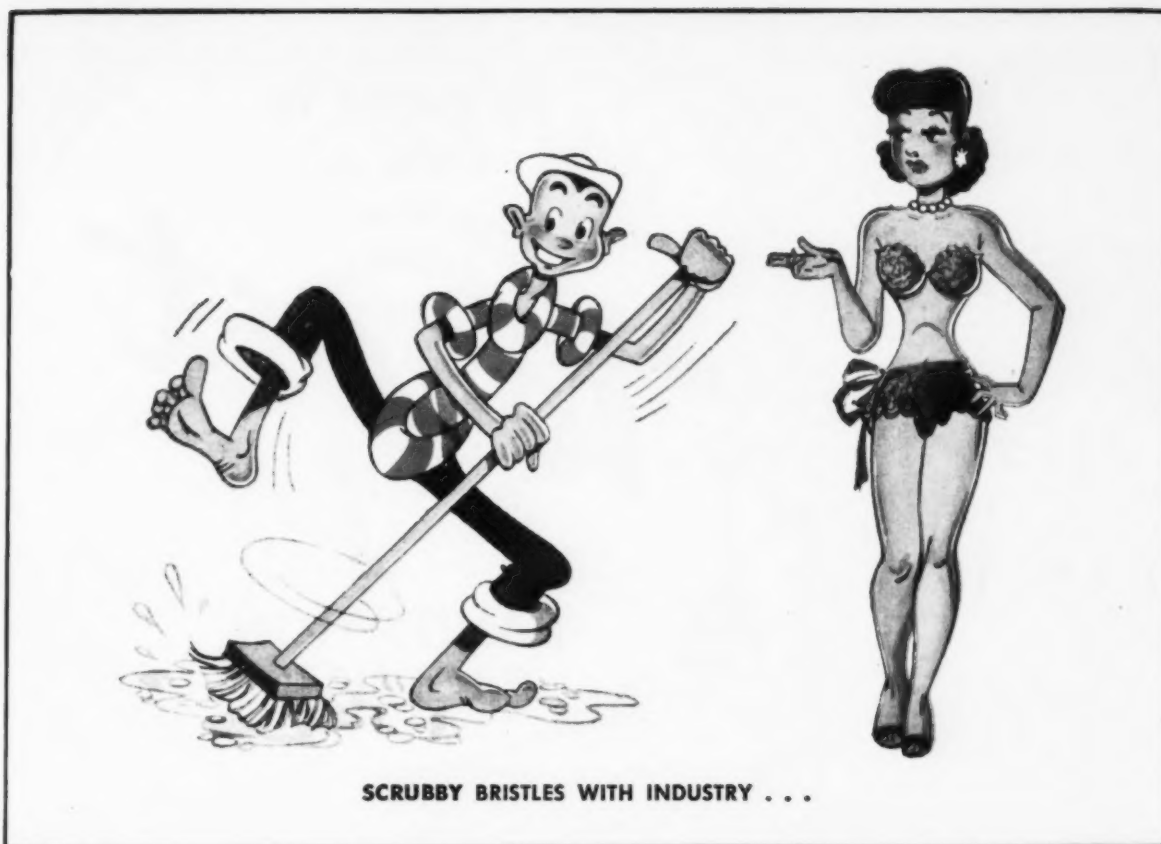
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Cleaning comes first with the "FLOORADORA BOYS"

(SCRUBBY, MOPPY, RINSEY, WAXEY)

"Now it happens, yes. But you should have caught me back B.D.Y. (Before Davies-Young, that is!) All work and no fun and Scrubby was a very dull boy indeed, Jack! But now . . . now it's arson the way I and D-Y burn up the dirt and stain. Swish! Before you can say "obis-taniscrunch" you note an amazing absence of any grime whatever. And so, what with Davies-Young oblig-

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BEAMAX • BUCKEYE • SANI-SCRUB • FLOREX • NO. 30 • EX-ALK

It is imperative that all floor surfaces be properly prepared for wax treatment by use of the above scrubbing soaps where their specific qualifications are required. Send for folder which gives complete information.

**The Davies-Young
Soap Co.
DAYTON, OHIO**



THE DAVIES-YOUNG SOAP CO.,
400 N. Findlay St., Dayton, Ohio

S65C546

Please send folder on the treatment of floors and their proper maintenance.

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CITY _____ STATE _____

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for **CLEANING**
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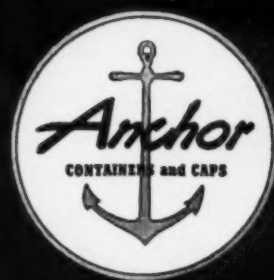
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WHEN your package is sealed with an Anchor Amerseal Cap you can be sure that the consumer's reaction will be favorable insofar as the sealing and convenience of the package is concerned. You can be sure that every one of your packages will open easily at the merest twist of the wrist and that the same simple, easy quarter turn will reseal them tightly and securely again.

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**ANCHOR HOCKING GLASS
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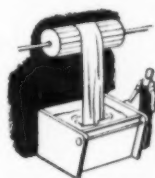


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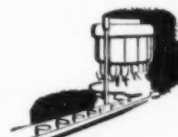
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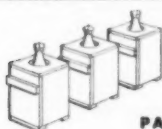
IN SOAP MANUFACTURE...
For glycerine recovery



IN TEXTILE MANUFACTURE...
For carbonizing wool



IN COSMETIC MANUFACTURE...
As an astringent in preparation of deodorants



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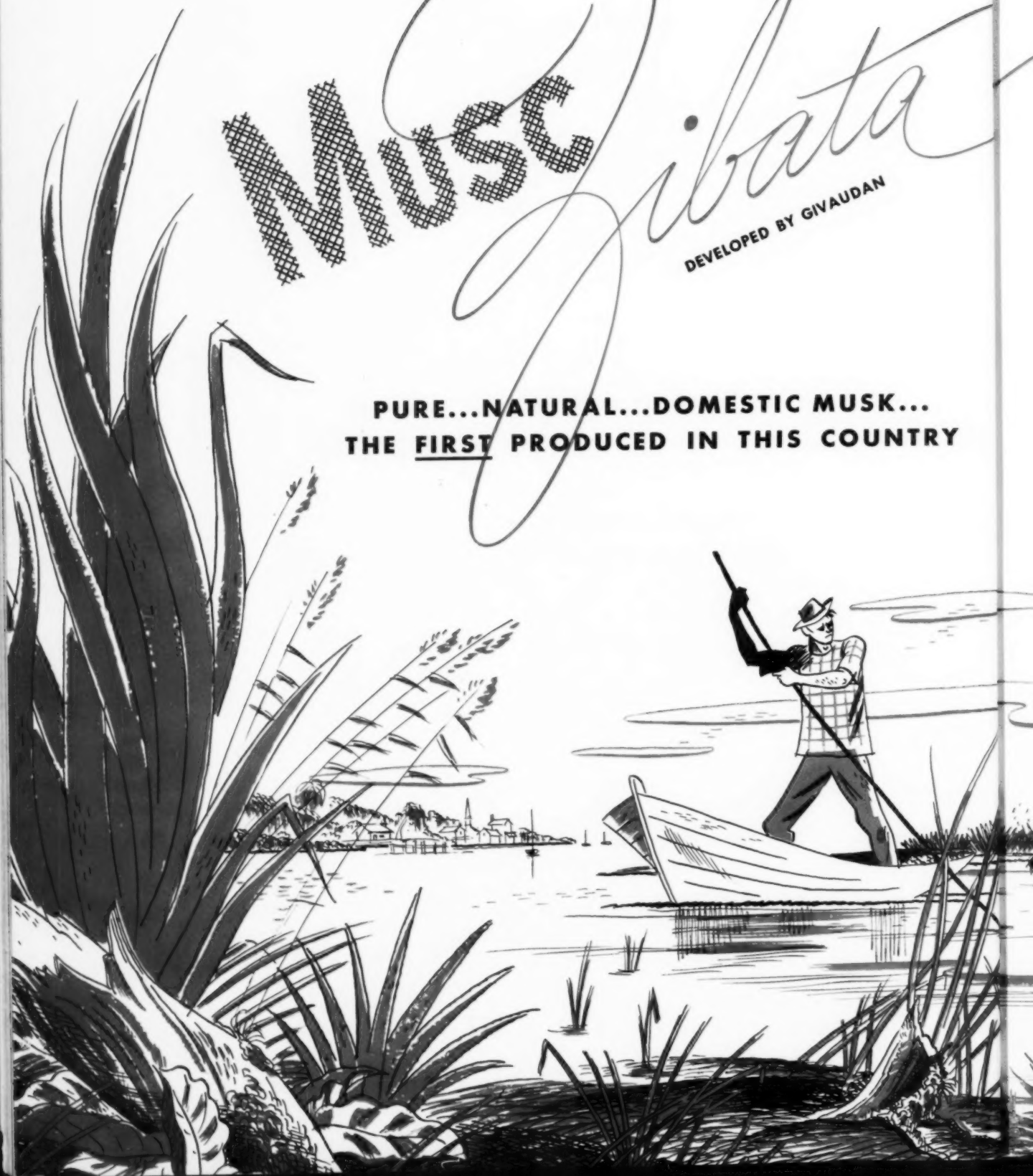
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PURE...NATURAL...DOMESTIC MUSK...
THE FIRST PRODUCED IN THIS COUNTRY



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For a perfume formula that requires tenacity, depth and individuality, MUSC ZIBATA is unchallenged.

For the perfumer seeking to create the unusual among extremely high-grade perfumes, MUSC ZIBATA is an unexcelled answer.

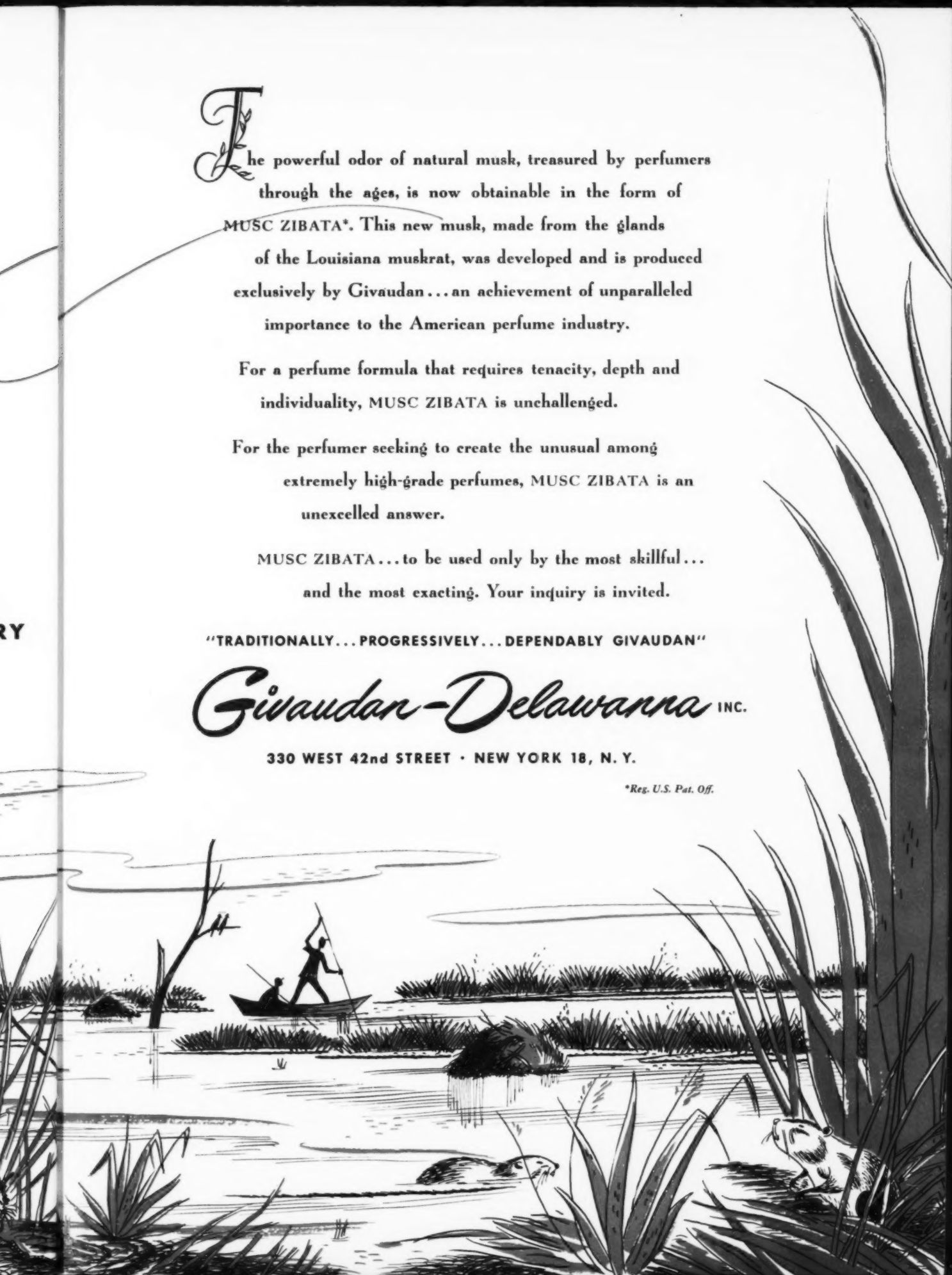
MUSC ZIBATA...to be used only by the most skillful... and the most exacting. Your inquiry is invited.

"TRADITIONALLY...PROGRESSIVELY...DEPENDABLY GIVAUDAN"

Givaudan-Delawanna INC.

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It's a small world



IN BANGKOK you can buy clocks made in New York. The same brands of soap are sold in Paris, France, and Paris, Texas.

Essential to this world-wide trade is good packaging—and one of the most important packaging materials is *paperboard*. It's light but tough and highly resistant to weather and water.

For the making of paperboard, Wyandotte Chemicals Corporation furnishes huge quantities of *soda ash* and *caustic soda*, *chlorine* and *calcium carbonate*.

The *soda ash* is used to reclaim waste material

and de-ink waste paper. It and *caustic soda* reduce the mixture of scrap paper, straw and wood to a workable pulp from which strong and durable containers are made.

Chlorine is important in the bleaching process. And when an attractive paperboard package is desired, Precipitated Calcium Carbonate helps produce a high-grade coating.

So, through its vast production of these chemicals, Wyandotte plays a vital part in helping speed American commerce over the seven seas.



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ALL TYPES OF PERFUME



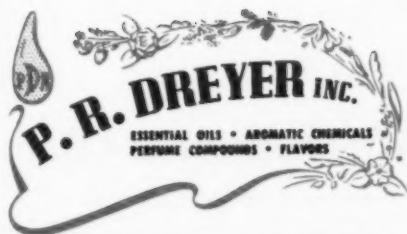
FOR ALL TYPES OF SOAP

For years, Dreyer chemists have made a
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Synthetic specialty perfumes created by
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HANDBOOK OF PEST CONTROL

The Behavior, Life History and Control
of Household Pests

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TABLE OF CONTENTS

Chapter

- 1 Rats and Mice
- 2 Silverfish
- 3 Springtails
- 4 Cockroaches
- 5 Crickets
- 6 Earwigs
- 7 Termites
- 8 Dry Rot Fungi
- 9 Wood-boring, Book-boring and Related Beetles

Chapter

- 10 Psocids
- 11 Bedbugs and Other Bugs
- 12 Clothes Moths
- 13 Hide and Carpet Beetles
- 14 Ants
- 15 Bees and Wasps
- 16 Stored Product Pests
- 17 Spider or Ptinid Beetles
- 18 Lice

Chapter

- 19 Fleas
- 20 Flies and Mosquitoes
- 21 Spiders
- 22 Mites
- 23 Ticks
- 24 Miscellaneous Household Pests
- 25 Chemicals Used in Controlling Household Pests
- 26 Household Fumigation

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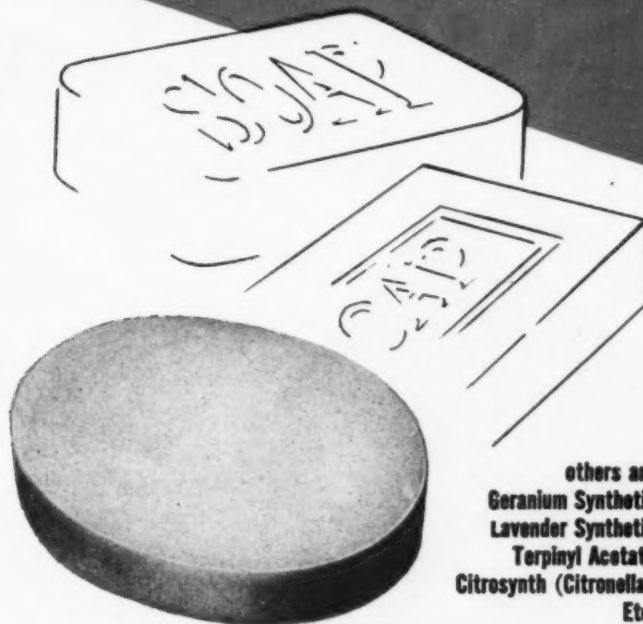
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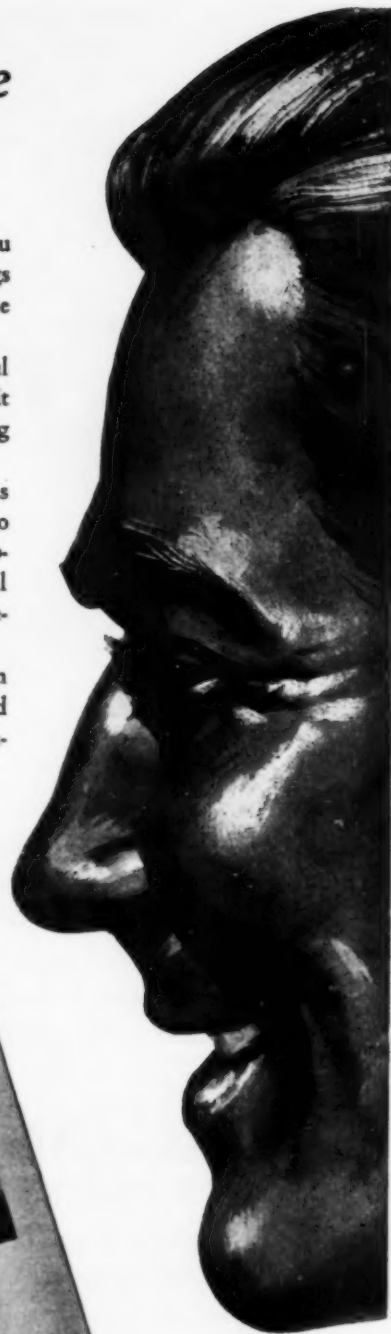
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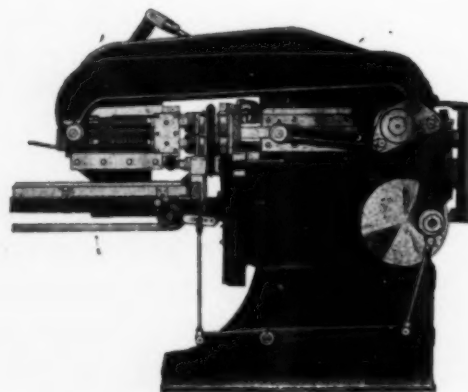


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IN SPITE of the shortage of coconut oil, fat and oil consumption in soap manufacture for the five year period ending with 1945 averaged over two billion pounds per year. This in terms of soap production gives a round figure of four billion pounds per year. For the preceding five year period, 1936-40, the soap kettle consumed yearly on average of one and a half billion pounds of fats and oils. The over-all effect of the war years was to boost soap manufacture about one-third. In terms of wartime industrial production as a whole, this is not great, but when the limitations on soap raw materials are considered,—and the quality of the soaps delivered to both industry and household,—it was a commendable performance.

Figures covering fats and oils used in soap manufacture from 1932 through 1945 have been released by the U. S. Bureau of the Census and they reveal other interesting facts. Whereas coconut oil used for soap was close to a half-billion pounds in 1941, it had dwindled to sixty million pounds by 1945. Coincident was a sharp rise in the use of tallow and grease, this total during the war years being about twice what it was prior to 1939. Another significant trend was the steady increase in the use of fatty acids from 1940 through 1945, the total rising close to 400 million pounds last year. A study of the figures tells the story of the steady decline in the consumption of olive foos and oil as supplies dried up. Also it reveals a rise in the use of fish oils, as well as babassu and palm kernel in 1945, the total of the latter two exceeding the consumption of coconut oil.

During the next year, possibly longer, the needs of the undernourished populations of the globe for food fats in addition to other requirements will undoubtedly keep the

pressure on output. With the return of world production to normal, plus a continuation of new facilities developed during the war, a sharp swing of the pendulum from scarcity to overproduction appears possible. If prices take their usual course under such conditions, an abundance of cheap fats and oils should stimulate the commercial exploitation of numerous new developments in fat chemistry of the past ten years especially in fatty acids and their widening field of new derivatives, detergent and otherwise. Marked changes in the soap making picture of old are not unlikely. When soapers again can choose their raw materials freely instead of being forced to take anything that happens to be available, the industry may find itself in a new and strange world.

WHILE viewing the present and future positions of the oil and fat picture as far as the soap industry is concerned, it is interesting to note the manner in which various synthetic organic detergents and wetting agents have been eating into the market for soap products of late. Until the Department of Agriculture restricted the use of fats and oils for the manufacture of non-soap detergent derivatives,—placing them on the same quota basis as fats going to the soap kettle,—such detergents were expanding their field rapidly and chiefly at the expense of ordinary soaps.

Especially in the case of some types of industrial and specialty soap products, they have posed ever stiffening competition. In fact, for the first time in several years, some soap specialty manufacturers recently reduced prices due to a falling off in demand. Whether this has been due to synthetic detergent competition is a question. Neverthe-

less, the complaints of soap manufacturers against the ex-quota status of the synthetics apparently caused the Department of Agriculture to act.

The action of the Department will naturally restrict the growing activities of the newer detergents for the time being. Not until the removal of all restrictions on fats and oils will the brewing competitive struggle have an opportunity to show in which direction it will move. But we feel that in the long run, more than a Department of Agriculture order is going to be needed to halt the development of these newer things and their inroads into the market for the old stand-bys.



OVERALL production and imports of oils and fats in the United States will be ten per cent higher this year than in 1945. This is the view of one of the leading American authorities on the question, a large Chicago operator. On the other hand, the Department of Agriculture experts say that this total figure will be ten per cent lower than 1945. And both have the figures to prove their contentions. And both have something of an interest in proving that they are right, one because he wants higher quotas set for soap fats and the government officials because they evidently feel that they cannot increase quotas.

When the experts disagree, the thing to do is to toss a coin or visit a fortune teller,—or seek another opinion. This latter, we have just done. We have examined our own observations of the oil and fat markets of the past twenty-five years and if we may judge by the signs,—lacking of course major crop failures,—domestic production of oils and fats will not be lower this year than last. Neither will imports, modifying factors to the contrary notwithstanding. Accordingly, we have called up our bookie and placed our two bucks on the nose of the expert from Chicago.

WORD is around in Washington that a recommendation from the Committee on Small Business of the House of Representatives to the Department of Agriculture will call for a liberalizing of soap fat and oil quotas for the small manufacturer. The report is that a quota-free allowance of 250,000 pounds of oils and fats will be recommended for each soap manufacturer before quota restrictions begin to function. To the larger soapers, this would be of no great moment, except insofar as it would multiply their competition by giving a large number of small manufacturers an opportunity to expand their outputs. To many small firms, however, it would mean the chance to increase their production and sales which they have been waiting for.

Coupled with the news that coconut oil is more plentiful, and buyers few because of restrictions, an early liberalization of quotas would be welcomed by most smaller soapers. Thus far, however, it is only a report, not a confirmed fact.



IN LESS than two months, imports of laundry soap into Puerto Rico from the U. S. were almost ten million pounds. In fact, the period covered in a report was for only forty-seven days beginning March first. Normal laundry soap consumption for the island is about 1,500,000 pounds per month. In other words, the rate of import for the period mentioned was approximately four times consumption needs. A protest from Puerto Rico against endangering the small soap industry of the island by these large shipments was to be expected. As is pointed out, with Europe literally starving for soap, why should shipments to Puerto Rico be increased so markedly at this time? Remembering the manner in which soap shipments to Puerto Rico have been kicked around as a political football, these imports might bear closer scrutiny.

Lecithin In Soap

By MILTON A. LESSER

LECITHIN has been used in soap making for well over a decade. Although European producers have long known and appreciated its properties, American soapers do not appear to have taken full advantage of the various characteristics inherent in this material. It is quite possible, too, that they have failed to appreciate how lecithin has been improved during recent years to meet the requirements of various industries. In searching for ways to make improvements and to meet growing competition without excessive costs, soapers might do well to look into the possibilities of using lecithin.

A product of growing versatility, lecithin has found quite a number of important commercial applications. Now a quite standard component of oleomargarine, chocolate, baked goods and other food products, lecithin has also achieved considerable value in making pharmaceuticals, cosmetics and soaps. Other basic industries have begun to employ lecithin and it is finding use in paints and printing inks, in textile and leather treatments, and in rubber manufacture. At present the consumption of lecithin in the United States is in the neighborhood of 2,000,000 pounds each year.(1)

The most important uses for lecithin stem from the fact that it is an effective emulsifying and dispersing agent, one capable of reducing surface and interfacial tensions. In soap making, lecithin is classed as a superfatting agent, not only because of its

beneficial effect on the skin, but also because it helps to inhibit hydrolysis, a major factor in the release of skin-irritating alkali. Another important consideration for its use lies in the lather-stabilizing action provided by lecithin.

Lecithin, it should be pointed out, is a general, not a specific term. As remarked by Harry,(2) the lecithins comprise a family of which there are many members and therefore they should be regarded as a group rather than a chemical entity. Originally, lecithin was obtained from brain tissue, and later from egg yolk, this last being a rich source of the material. However the small quantities available as well as the high price of what little was manufactured greatly hampered the wider use of lecithin. It was not until methods were devised to extract the material from an abundant and much less expensive source, like soybean oil, that lecithin began to assume its present commercial importance. Although a minor proportion of lecithin is obtained from corn oil, most of the commercial material is derived from soybean oil.

In modern practice lecithin and associated phosphatides are extracted with a petroleum solvent and separated mechanically from the mass of oil.(3) According to Hilty,(4) purified hexane is the solvent generally used in extracting soybean lecithin. After removal of the solvent, lecithin remains suspended in the oil from which it is precipitated as an emulsion by hydration with steam and sub-

sequently removed by centrifuging. After this, the lecithin emulsion is dried under vacuum at low temperatures. Further treatment, such as bleaching, may follow the drying process.

The resulting product contains about 65 per cent phosphatides and 35 per cent associated soybean oil. Analyses of commercial lecithins have shown that they consist of a mixture of the phosphatides, lecithin and cephalin, with from 30 to 40 per cent of free oil.(5) The ratio of lecithin to cephalin in these rather complex combinations seems to vary somewhat, according to the source of supply. Associated with the three basic constituents may be minute quantities of sterols, carbohydrates, glycosides and other substances. Of decided interest in this connection are foreign studies(6) which indicate that too highly refined material may not always be desirable. These investigations revealed, for example, that an impure soybean lecithin provides better emulsification than does a pure product.

Lecithin is available for commercial use in various consistencies ranging from a golden, rather heavy oil to a light-brown, soft, salve-like substance. With a bland taste and a neutral odor, soybean lecithin is free of the objectionable smell characteristic of products of animal origin.(7) Quite stable, manufacturers recommend that lecithin be stored at temperatures ranging from 70° to 100° F. Refrigerating lecithin may cause hard-

ening and perhaps some separation, while unduly high temperatures, if prolonged, will cause darkening of the material. Soybean lecithin has no definite melting point but becomes quite fluid, like an oil, at about 130° F.

The two phosphatides, lecithin and cephalin, are the major components of commercial lecithin. Chemically the phosphatides occupy a position somewhere intermediate between the fatty oils and the proteins and on this fact may rest many of their actual and potential applications. Structurally, notes Bailey, (1) the phosphatides consist of glycerides in which one fatty acid radical has been replaced with phosphoric acid. In the case of lecithin, the phosphoric acid is further esterified with choline, while in cephalin it is similarly esterified with cholamine. These compounds, therefore, contain both lipophilic and hydrophilic groups, a characteristic common to surface-active agents.

Readily dispersible in vegetable oils, lecithin is soluble in most organic solvents except acetone. Insoluble in water, its hydrophilic groups cause it to swell in water to form colloidal emulsions that are stable and capable of considerable dilution. Because it reduces surface tension and interfacial tension, lecithin is readily adaptable as an emulsifying and wetting agent, (8) a fact well established by controlled investigations. (9, 10).

From the viewpoint of the biochemist and physiologist, lecithin is a rather common substance; one found naturally in almost every living cell, of both the animal and vegetable kingdom. (11, 12) The universal presence of lecithin in all cells, or at any rate in the vast majority of them, suggests that it is concerned in some function common to all cells. (13) As remarked by Eichberg, (14) not only is lecithin an indispensable part of every living cell, but its activities are intimately concerned with cell metabolism and the systematic transport of fats. Indeed, soybean lecithin has been used in the treatment of conditions associated with faulty fat metabolism, (15) including resistant skin conditions. (16)

The soap maker is primarily

interested in the relationship between lecithin and the skin, as well as its effects on the dermal tissues. As is now well known, lecithin in combination with cholesterol is found in a well-defined ratio in the skin tissues. As remarked by Harry, (2) in citing the work of Rewald and Schwiager, lecithin is a relatively large constituent of human skin, being present to the extent of approximately 0.4 per cent.

THE phosphatides, as a group, have definite softening effects and this softening influence has been utilized in preparations for the skin. (11) As a product with recognized emollient action, (2, 7, 17) lecithin belongs to the group of agents employed for softening or rendering the skin more pliable. Noteworthy is Davidsohn's (18) observation that lecithin has a deeply penetrating effect on the skin. Lecithin, he states, stimulates the skin by promoting the renewal of the skin cells.

As already indicated, modern authorities in the field of soap formulation consider lecithin an important superfatting agent. (18, 19, 20) As is well known, superfatting agents contribute mildness to soaps, promote a better action on the skin and help to counteract the effects of alkaline hydrolysis. They are especially useful for people with sensitive or dry skins. Glenn, (20) of England, in comparing the emulsifying and emollient properties of lecithin with those of lanolin, came to the conclusion that so-called "vegetable lecithin," (e.g. soybean lecithin) is sufficiently cheap to be used with or in place of lanolin.

However, other European workers (21, 22) are of the opinion that lecithin rates an important place in soap formulation on the basis of its own merits. They observed that the addition of lecithin to soap not only provides a finer texture, but also effects better cleansing by increasing the emulsifying and lathering properties.

Lecithin's ability to stabilize lather is considered to be among its most important effects. (23) Thus in his review of superfatting agents, Glenn states that lecithin's "real

value to the soap maker is its stabilizing action on the lather." He notes that while lecithin reduces the bubble size, it produces a pleasing creamy effect. Of interest in this connection are the carefully controlled observations made by Inaba and his associates (24) with a series of soaps of pure fatty acids, such as oleic, palmitic and stearic acids. Using these soaps in solutions of various concentrations, they found that lathering value and stability are increased, but that the lather volume was somewhat reduced. These workers also reported that the turbidity and transparency temperatures of soap solutions are reduced by from 3 to 5° C. on the addition of lecithin.

As part of its recognized function as a superfatting agent, lecithin displays a notable alkali-depressing effect. (18) This it achieves through its ability to inhibit hydrolysis of the soap with which it is combined. It is a familiar phenomenon that all soaps in aqueous solution undergo hydrolysis to some extent and are thereby split up into free alkali and fatty acids. (25, 26) As was pointed out in a recent review in this publication, (27) it is assumed by a number of workers that the alkali so liberated is an important cause of skin irritation by soaps. From this angle, the beneficial action of lecithin should warrant much interest.

DECIDEDLY pertinent, not only with respect to the effect of lecithin on hydrolytic dissociation, but also with regard to its detergent ability and suspending powers is a series of simple, but quite indicative comparative tests made available (28) for this review. In this work three samples of liquid soap were used; one sample containing no lecithin and the other two containing respectively, 1 per cent and 2 per cent of lecithin, based on the total weight of the soap. The lecithin was incorporated by dissolving it in the liquid soap previously heated to 140° F.

Hydrolytic dissociation was determined by diluting 0.5 cc. of each sample to a volume of 100 cc. and adding 1 cc. of phenolphthalein indi-

cator; the depth of color serving as an index of hydrolysis. The color of the control was nearly a wine red; the color of the sample containing 1 per cent of lecithin was a light red, while that of the third sample, containing 2 per cent of lecithin, was a light rose. From this it is evident that as little as 1 per cent of lecithin is effective in suppressing hydrolysis.

In testing detergent ability, 1 cc. of each sample was rubbed separately on hands previously smeared with grease and dirt. It was noted that the addition of lecithin to liquid soaps decidedly facilitated the removal of grime; the soap containing 2 per cent of lecithin being superior to the one containing less of this material. The soap without lecithin appeared to lack the characteristics of the lecithin-containing soaps, the latter giving longer-lasting lather and imparting a "silky" feel to the skin. Although this phase of the test is not "scientific" in that personal or subjective factors enter into the conclusions, the findings are in line with those of others who have reported on the action of lecithin-containing soaps. Moreover, one cannot overlook the fact that personal preferences are a prime factor in soap purchasing.

Very indicative with regard to cleansing properties were the tests comparing suspending powers. For this determination, to each of three 10 cc.-graduates was added 0.5 Gm. of calcium carbonate and each of the soaps added to the 10 cc. mark. The graduates were shaken for one minute and allowed to stand for three minutes. At the end of that time, the volume of settled powder in the con-

trol soap was 0.4 cc., that in the soap with 1 per cent of lecithin was 0.2 cc.; while the third sample yielded the same value of 0.2 cc. Lecithin, therefore, displays decided ability to increase a soap's suspending powers, but this ability is not in proportion to the amount added.

WHILE providing these and other superiorities, among the few disadvantages that may be cited in connection with the use of lecithin in soaps is the factor of color, which, as previously mentioned, ranges from yellow to brown in the commercial materials. This may not be of great moment in liquid soaps which are often tinted during manufacture and diluted prior to packaging. Color is a rather more important consideration in the production of bar or cake toilet soaps. Although soaps made with lecithin are light colored, some may object to the yellowish tint imparted by its addition. In view of the several definitely advantageous qualities obtained through the use of lecithin, methods for overcoming the color factor are well worthy of consideration. Tinting the soap with an appropriate dye is one obvious answer, and a procedure very much in line with standard practices of the industry. Conversely whitening agents, like titanium dioxide, may be used in suitable proportions to help lighten the color. Most important, however, would be the incorporation of the lighter-colored grades of lecithin now available commercially. One manufacturer suggests the use of defatted lecithin for superfatting soap. Also of considerable importance is the method and thoroughness with which the lecithin is mixed with the soap base.

Lecithin, which contains fatty acid radicals, is itself saponifiable. Therefore it cannot be added to the soap kettle with the fat charge, but must be included in the soap after saponification and neutralization are completed. The method of incorporation will vary somewhat according to the type of soap.

To digress for a moment—the fact that lecithin can be saponified recalls some very interesting work reported by Hadjopoulos and Caspe (29) in 1938. They found that a lecithin soap, sodium lecithid, was superior to other known standard soaps as an intestinal bactericide and detoxifying agent. Clinical administration of this soap for the treatment of chronic intestinal disorders gave very satisfactory results.

Pursuing their studies further, these investigators (30) undertook to determine whether lecithin soap possessed properties similar to its parent substance in preserving vitamin A. They found that 5 per cent of lecithin soap retards the heat and air destruction of the vitamin in cod liver oil. Even in concentrations as low as 1 per cent, it retarded destruction of vitamin A in oil solution and aqueous emulsion. Despite the apparent significance of these investigations, there appears to be nothing in the technical or scientific literature to indicate that the findings were exploited further.

To return to lecithin itself, Davidsohn (18) has stressed that the incorporation of lecithin should be carried out carefully. Provision should be made to ensure its even distribution throughout the soap, otherwise discoloration is liable to occur in the finished product. Various methods have been devised to facilitate the incorporation of lecithin in soap or to provide other advantages in its use. Chiefly of European origin, it is a moot question whether or not such processes offer any superiorities over the use of unmodified lecithin. However, these developments do emphasize the value which has been placed on lecithin as a soap ingredient, and are therefore worthy of further consideration.

For example, both Braun (21) and Davidsohn (18) mention the avail

A discussion of the role of lecithin as an ingredient in soap formulas. An effective emulsifying and detergent agent, lecithin also helps to stabilize lather and inhibit hydrolysis

ability in Germany of a liquid containing 55 per cent of pure lecithin which may readily be incorporated in the soap when milling. The superiority is claimed to be due to the inclusion with lecithin of a so-called "liquescent" agent, but the composition of this agent is not given. However, the foreign patent literature offers other examples of special, soap-useful lecithin products and provides details on their composition. Thus, a material useful as an addition in making soap forms the basis of a French patent, (31) In this case, stable aqueous emulsions of vegetable lecithin and oil are obtained by heating fresh soybean residues (bleached with hydrogen peroxide) and adding this while still hot to a solution of waterglass.

More recent is a German patent (32) describing another method to facilitate the incorporation of lecithin in soaps. According to the specifications, in the manufacture of cosmetic or therapeutic soaps containing lecithin, the latter is mixed with a small proportion (e. g. from 10 to 15 per cent) of cyclohexanol or a cyclohexyl ester. This mixture is then incorporated into soap, preferably during milling. A base formula given in the patent illustrates this utility:

Soybean lecithin ...	85- 90 parts
Cyclohexanol	15- 10 "
Soap	900-1900 "

The amount of lecithin that may be incorporated into soap is not fixed. Although as little as 1 per cent will exert a favorable influence, up to 10 per cent of lecithin has been employed as a soap component. (18) Lederer (22) has found that adding 5 per cent or more of soybean lecithin increases emulsifying and lathering power and improves the cleansing properties of soaps. At the other extreme, Glenn (20) feels that up to 1 per cent is sufficient, but in this he stresses chiefly the effect on the lather.

WHILE European soapers have emphasized and concentrated on the usefulness of lecithin in cake toilet soaps, American workers seem to find that its most satisfactory use is in the production of the liquid type hand

soaps and, to some extent, in liquid shampoo soaps. Its value in liquid hand soaps is to impart mildness and a more thorough cleansing action. (3) Both are very desirable qualities in products that are used frequently by workers in industrial plants, office buildings and the like.

It is interesting that lecithin, which forms milky emulsions with water, gives clear solutions with liquid soap. Lecithin may be incorporated into a liquid soap by mixing it with the concentrated potash soap before dilution with water and before the soaps are settled and filtered. Mixing is facilitated by heating the liquid soap to about 140°F and adding the lecithin with good mixing and agitation. As an alternate procedure, the lecithin may be mixed with a small volume of the finished soap and this added to the balance of the liquid soap, which is allowed to settle, then chilled, and filtered in the cold as usual.

It is already evident that the usual procedure in making bar or cake soap is to incorporate the lecithin during the milling stage. If properly done no discolored spots or inclusions should occur.

There is growing appreciation of the value of lecithin in shaving soaps and creams. (20,33) Chilson, (34) for example, observes that the wetting action of the lather is improved by the addition of up to 3 per cent of lecithin. In addition to increasing the wetting action of the lather, he notes that lecithin ameliorates its harshness. Lecithin is easily incorporated in a shaving cream. It has been suggested (28) that, in formulas containing sodium or potassium hydroxide plus the usual fatty ingredients, the lecithin be added after saponification has been completed. The lecithin is then added in the form of an emulsion made by adding it to the water required to bring the product up to weight. Another suggested method is that 5 parts of a "mucilage" prepared from 10 parts of vegetable lecithin and 90 parts of water be added to 100 parts of shaving cream. (33)

Merely by way of illustration there may be cited the following lecithin-containing shaving cream, as given in Chilson's standard text:

	Percent
Stearic acid, triple pressed.....	25.00
Coconut oil, cochin.....	5.13
Triethanolamine stearate	3.12
Lecithin	1.00
Potassium hydroxide	6.13
Water	54.34
Glycerine	4.60
Perfume	0.50

An interesting observation made during studies of lecithinated shaving cream was the fact that, in addition to its effects in reducing "drag," improving the lather, and imparting a smooth velvety feel to the skin, such products also had a "sparing" effect on the razor blades. After three shaves with a lecithinated cream, microscopic examination showed the blades to be free of nicks, whereas a similar number of shaves with an untreated cream caused several nicks in the blades used. Since the experiments were rather well controlled, this effect cannot be attributed to mere coincidence. (28)

Another phase of usefulness for lecithin is its ability to facilitate the combination of solvents with soaps. (8) This has been aptly illustrated in a German patent (35) in which it is claimed that soap containing an organic solvent, like carbon tetrachloride or benzene, is improved by the addition of vegetable lecithin.

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(Turn to Page 143)

QUOTA RELIEF for SOAP MAKERS

House Committee on Small Business
Considering substantial increase
in ex-quota fats for small soapers

THE Small Business Committee of the House of Representatives which held a three-day hearing in Washington April 3, 4 and 5 to investigate charges that WFO-42b is being administered unfairly, resumed its investigations after a ten-day lapse with another session April 15. The principal witness on this date was John F. Bass, one of three partners in the Central Hide and Rendering Company and the Bass Soap Company of Abilene, Texas.

The name of the Bass Soap Company had been brought to the attention of the committee at one of its earlier sessions by E. O. Gillam of Gillam Soap Works, Fort Worth, Texas, who charged that the Bass Company was consuming fats in the manufacture of soap at the rate of 30,000 pounds per day although they had never had a quota. Mr. Bass admitted that his operations had not been covered by any quota, but stated that his rate of consumption of fats and oils had never been above 8,000 pounds a day. He plead complete ignorance of the necessity of having a quota and stated that it would be impossible to continue the operation of his five rendering plants—which he indicated have been operated at a loss—unless he is able to obtain an adequate quota base from the Department of Agriculture to allow him to conduct his soap plant on a profitable scale.

Gordon Peyton, Acting Assistant Administrator, Production and Marketing Administration of the U. S. Department of Agriculture, stated that the department has held off on proceeding either civilly or through the criminal courts against Mr. Bass for his admitted violations of quota rules until he had an opportunity to present his case at the hearing.

Some idea of the direction in which the collective mind of the committee seems to be pointing may be obtained from an explanation given to Mr. Bass by Representative Estes Kefauver who presided at the April 5 hearing. Mr. Kefauver said in part, "I think the little fellow ought to be given an additional break because of the many, many little soap manufacturers having a mighty hard time operating at all under the present quota system."

"We have considered various things, one of them including an ex-quota in the base period, and others of giving them an allowance of 250,000 or 300,000 pounds before the quota restriction is begun. And I think these gentlemen are going to try to work out some way of giving an additional allowance to the small fellow."

He indicated also that in addition to giving relief in the way of increased quotas to small soapers, some plan would have to be developed to see that new firms are permitted to enter the soap business on a sufficiently

large scale to allow them to operate economically. He referred to the present small quota consumption allowed by the department (15,000 pounds of fats a quarter) as a "beginners quota."

Further on this point, Mr. Peyton indicated that the department has been giving considerable thought to the quota that should be allowed a new firm desirous of entering the soap business. They have been thinking along the lines of 60,000 to 100,000 pounds of fats a quarter for the manufacturer of laundry bar soap. No action has been taken as yet, however, pending the result of the hearings. Mr. Kefauver reported, further, that the committee, in addition to considering recommendation of a higher quota basis for smaller soap makers, has also been considering a possible recommendation that WFO-42b be abolished entirely, but that no decision has yet been reached as to exactly what to recommend. He did go on record, however, as believing that the Department of Agriculture is insisting on maintaining "too large a stock pile of oils and fats and they ought to try to see whether they might not be able to get by with a smaller stock pile."

The subject of soap exports was also taken up by the committee and reference was made to the point that export licenses are not required on shipments of soap to Puerto Rico. An allocation system has theoretically been in effect on such exports but it was

brought out in a letter from Pedro Grau, importers and exporters, San Juan, Puerto Rico, that Puerto Rico's four small laundry soap manufacturers have recently had to shut down their plants because of excessive arrivals of American soap. According to a letter from Mr. Grau, "Puerto Rico with a normal monthly laundry soap consumption of 1,500,000 pounds has imported 8,450,000 pounds in 34 days."

Mr. Peyton admitted that Puerto Rico's allocation has been exceeded, but that future shipments would be curtailed to compensate.

SEVERAL additional witnesses appeared at the April 3, 4 and 5 hearings whose testimony it was not possible to include in our report in the April issue of *Soap & Sanitary Chemicals*. Among several soap makers who testified as being opposed to abandonment of the quota system, was Carter Poland of Poland Soap Works, Anniston, Ala., who stated that he "doesn't want to see the quotas done away with because I think it is the only fair basis on which to handle the situation, and the only assurance the small soap makers have of being able to get fats." He indicated, however, that he did not think it the function of Congress to keep a soap factory operating or to insure that it keep in peace time the production it enjoyed during the war years. He further expressed a certain skepticism that holders of war contracts have been handling government business simply for patriotic reasons.

Another witness at the April 5th hearing was Walter S. Straub of W. F. Straub Co., Chicago, and now on leave helping with the Emergency Famine Relief Program. He offered the opinion that "from the standpoint of the big effort being made to increase shipments of edible fats abroad, it would be a handicap to that program if quotas were removed at this time on the use of fats." He indicated further that he considers that established soap manufacturers, like other manufacturers who have been serving markets through good times and bad, should be entitled to special consideration. It is inequitable, he believes, for newcomers to be allowed to invade established

markets during a period when no sales effort is required and while established manufacturers are held down by quota restrictions. "If it were hard to sell soap today," observed Mr. Straub, "the committee would not be bothered by some of the demands that have been made upon it."

Another witness at the April 15th session was E. A. Moss of Swift & Co., Chicago, who expressed his belief that "some correction in present quotas is called for." Under the present quota set-up, he figured, the per capita soap supply for civilians this year will be only 20 lbs. as compared with normal per capita consumption of around 25 lbs. In his opinion there will be enough domestic fat available to make the 20 lbs. per capita permitted by the quotas, and imports of fats and oils, which he believes will reach 400,000,000 lbs., should make it possible to correct the apparent shortage. He indicated that he was in favor of lifting all controls as soon as possible, but that the decision as to when this action could be taken should logically be left to government officials who alone have all the facts on which to act.

There was considerable discussion at this session as to how much additional oil and fat would be consumed if an ex-quota base of 250,000 lbs. per quarter were given each soap maker. Figures presented by the Department of Agriculture indicated that an additional 95,000,000 lbs. of fats and oils would be required. If this additional quantity cannot either be produced domestically or imported, such a reallocation of present supplies would mean that the quotas of larger soap makers would have to be reduced. It was estimated, for instance, that Procter & Gamble's present quota of 726,000,000 lbs. a year would have to be cut by approximately 12 per cent, and that Lever Bros. Co. would suffer a substantial cut in their present quota of 393,000,000 lbs.

SUBSEQUENT to the close of the April 3, 4 and 5 hearings, a supplementary statement outlining the particular supply problems of the potash soap group was filed by Herbert H. Kranich of Kranich Soap Co., Brook-

lyn, who had been a witness at the April 4 hearing. Mr. Kranich's statement was as follows:

April 13, 1946
Honorable Estes Kefauver
Subcommittee on Complaints
Special Committee to Investigate Small Business
U. S. House of Representatives
Washington 25, D. C.
Dear Sir:

The excellent suggestion developed by members of your subcommittee at the recent hearing on the Fat and Oil Order WFO-42b of 250,000 pounds base exemption before quota use of these raw materials by all soapmakers, would afford the vast majority of the firms in the industry substantial relief, and enactment by the War Food Administration of your suggestion would definitely help small business.

However, do you not think it advisable that this 250,000 pounds be made available for bonus use only after quota fats and oils have been consumed? A simple change in the Order WFO-42b, sub-section B, paragraph 2, of the figure 10,000 pounds to 72,500 pounds would provide the same relief as embodied in your original suggestion for the quarterly raise of 62,500 pounds amounts to 250,000 pounds per annum. The original governing provisions in this subsection would remain in effect. Trafficking in quotas would be voided, for under the order only original quota and not a seller's new 72,500 pound bonus could be conveyed to the purchaser of an established soap business.

In the entire industry approximately 20 firms (using more than five million pounds per annum each) would surely each utilize their entire 250,000 pound additional bonus and the total amount consumed by this group would amount to five million pounds. The other 235 firms now consuming 150 million pounds of fats and oils under quota would not and could not, each and every one, consume their 250,000 pounds of additional bonus. If they did, it would mean 58,750,000 pounds to be consumed, or a total increase of 39 per cent additional business which is very improbable. They might possibly consume, under the most favorable conditions, 20 million pounds above quota under this bonus plan, (an average of less than 100,000 pounds each), which might amount to possibly 15 per cent additional business. Of this total amount the potash soapmakers might consume a maximum of eight million pounds and the balance of 12 million pounds would be consumed by all the other small soda soap manufacturers. The total therefore, of the 20 firm group plus the 235 firm group would be 25 million pounds or 1 1/2 per cent of the present fat and oil consumption. This figure is submitted in contrast to the 65 million pounds mentioned in the testimony, which latter would mean that the 235 firms would consume the difference (60 million pounds), an improbability as pointed out. Most of them do not have the plant capacity and the new C.P.A. order limiting commercial construction, would inhibit production expansion.

Consideration must also be given to the veterans or civilians who desire

(Turn to Page 175)

Potash Soaps

VS

Synthetic Detergents

BY

*Herbert H. Kranich**

Kranich Soap Company

SYNTHETIC detergents are becoming an increasingly important subject to the potash soap maker, today, for they are serious competitors with potash soaps for a share of the market for washing materials. A number of new synthetics have been developed during the war years, and some of these have already come on the market, or will shortly, to put additional competitive pressure on the seller of potash soaps. It is important that the potash soap maker know the weaknesses as well as the strong points of these interesting new detergent materials, for only with a complete knowledge of their chemical and detergent nature, will he be fully prepared to meet their competition.

Synthetic detergents possess certain desirable characteristics in greater degree and others of importance in lesser degree than do soaps. To the extent that user's needs are confined to the characteristics which synthetic detergents possess in greater degree than do soaps, they may find greater acceptance. Conversely, to the extent that they have replaced soaps in fields of use where the user has greater need of products having the outstanding characteristics of soap, the acceptance now accorded the new synthetic products may prove only temporary.

In my opinion, synthetic detergents are still on trial, and must prove

* Before Potash Soap Division, Association of American Soap & Glycerine Producers, Hotel Roosevelt, New York, Jan. 10, 1946.

equality with soaps for many of soap's uses. As a manufacturer and chemist, my interest in them is confined to those offered as replacements for potash soaps. At the moment the new synthetics enjoy the advantages any new product would have that was offered as a replacement, and for which strong performance claims were made. It is characteristic of Americans to try anything once, and they willingly pay for experience. This attitude makes it possible for advertisers to get a large trial use of a new product when offered as superior to old products. But punchlining one or two characteristics in advertising and promotion does not prove equality or superiority in over-all performance, nor does initial acceptance indicate continuing consumer preference.

Many times the deficiencies of new products are found to outweigh their advantages, so that they disappoint users when offered as over-all replacements for products that have a wide field of acceptance and use. This is through no fault of the manufacturer, because in most instances he simply does not know all the uses to which his product may be put. It is natural when trying to stimulate use, that he emphasize the known characteristics of his product that seem to make it superior to the most competitive product sold in largest volume. Unless the new product is definitely harmful, no one can blame him for failing to point out in what particular respects it may be less efficient than the entrenched prod-

uct. New products, therefore, except in fields under strict governmental supervision, are sold almost universally on a "buyer beware" basis. Sooner or later mass reaction of users shakes the product down into its proper use category. My guess, therefore, is that it will take a lot more than "drowning duck" demonstrations to hold the initial new-product acceptance as more people become aware of the deficiencies of the new synthetic products.

In making these general observations, I am not trying to underrate the serviceability of synthetic detergents for certain specific uses, particularly industrial, where utility depends upon characteristics inherent in the chemical nature of the products. I do intend, however, to deflate some of the over-emphasis that has been put on these new compounds as all-purpose detergents for personal and institutional use.

There is an almost endless variety of synthetic surface active agents, classified broadly as cyclic or acyclic. The cyclic detergents are closed chain or ring compounds consisting of carbon atoms only, or carbon atoms linked with one or more other atoms, to form heterocyclic compounds. The acyclic detergents are straight chain or branch chain compounds consisting only of carbon atoms or linked with other atoms as part of the chain.

Chlorination, hydrogenation, esterification, polymerization, sulfation and sulfonation are some of the chemical reactions used to produce them. At

the present time there are from two to three hundred different chemical compounds being offered commercially as synthetic detergents. The list is a very imposing one, and the end is nowhere in sight. Among this large number of different chemical combinations, every characteristic that soap possesses can probably be duplicated and possibly some new characteristic included that soap does not possess.

The common, outstanding characteristic of synthetic products that compete with potash soaps, is their action as wetting agents. A wetting agent is one that lowers the surface tension of the liquid in which it is placed. Tests would show that many of the new synthetic products increase the wetting action of water to a greater extent than do potash soaps. Described another way, between interfacial surfaces they would show a greater degree of penetration. This makes detergents coming within the more wettable class of particular value in certain industrial processes, particularly in the wetting of textiles for various purposes.

BUT the very fact that some synthetic detergents have greater wetting power than potash soaps appears to be a handicap rather than an asset in some important fields in which potash soaps are used. To illustrate: the power of the synthetic compound as a detergent lies chiefly in its penetrability due to the lowering of surface tension. It penetrates to substances adhering to surfaces and allows the water to wash away the dirt. But unfortunately its action is not confined to dirt alone. When applied to flesh, it does not stop at merely getting under the dirt, but also gets under the layer of oil on the skin, and may cause the defatted skin while drying to crack. Or when applied to the hair, it not only gets under the dirt, but if too much of the natural oil is removed, the hair in time may split and crack.

When the more active wetting agents are used on either wood or linoleum floors, they not only get under the dirt and allow it to be washed away, but may penetrate the pores causing loss of resin from wood, or oil

from linoleum. Linoleum may dry out and crack due to loss of the oils which keep it flexible. The action on wood floors, however, is both chemical and mechanical. Everyone knows that sulfuric acid will destroy complex cellulose. The synthetic products generally are sulfuric acid compounds. High penetrability causes them to seep between the natural resin and the lignocellulose particles of the wood. When this penetration is complete, a portion of the resins is released and washed away, and some of the detergent which has penetrated the wood is not washed away because the rinse water is not able to penetrate as deeply as the detergent. A decomposition of the residual detergent in the pores of the wood may cause sulfuric acid to be liberated to attack the wood and cause it to erode.

These characteristics are not found in potash soaps. While these soaps are wetting agents, their penetrating action is less. Instead of getting under dirt by deep penetration into the pores of skin, wood and linoleum, potash soaps dissolve and emulsify the dirt for removal by rinsing, with only slight removal of oils, fats, waxes and resins.

As wider use of synthetic surface active agents is made, particularly in homes, public buildings, and institutions, I think we will see more and more precaution notices to users, such as warning them to wear rubber gloves when using them. No such precaution is needed for potash soaps, not only because they dissolve and emulsify dirt, but also because they have a definitely emollient effect on the skin of the user. This is one of the beneficial characteristics not to be found in the new synthetic products.

Having some idea of the action of the synthetic wetting compounds on bare wood, linoleum and skin, it is interesting to see the lengths to which some companies have gone in recommending their use on painted woodwork and walls, without rinsing. I would be interested to know what scientific basis, if any, there might be for this. It might be interesting to learn whether it is better to rinse the surface thus tending to de-oil it, or leave the detergent there to decompose and further possible attack.

Some manufacturers make quite a point of the claim that their synthetic products can be formulated with pH value varying from 1 to 18, whereas the pH value of soap, both potash and soda, ranges between 9 and 11. How this might be of importance to users of potash soaps is difficult to see. If any one used potash soap in a mineral or organic acid bath, it would be important, but I have never heard of anyone attempting this so that if synthetic detergents can be made so that they won't decompose in such a bath, they have developed a new non-competitive industrial use all for themselves.

Possibly because of the performance limitations of synthetic detergents and the fact that their average cost is much higher than that of soaps, much prominence has been given by their manufacturers to the fact that most of them do not form lime or magnesium precipitates when used in hard water. There is no denying the fact, that soaps do form precipitates under the conditions stated. On the other hand, for maintenance cleaning, shampooing and handwashing, this has never been regarded as an important defect of potash soaps because any precipitates formed are readily flushed away in the rinse water. A shortcoming of the synthetics, somewhat offsetting their advantage on this point, however is that synthetic detergents do have to be buffered with other chemicals in order to function properly in exceptionally hard water areas.

There is little point in comparing additional use characteristics of synthetic detergents and potash soaps other than to say that I have failed to find any advantage that synthetic detergents offer for the uses customarily made of potash soaps. Summarizing the situation as a whole, it is clear that the *most important surface active material and all-purpose detergent still is ordinary soap.*

The United States Tariff Commission's report on the production and sale of surface active agents in 1944 shows the value of synthetic detergents averaged 22 cents a pound, the minimum being 9 cents and the maximum \$1.02 per pound. On the cost side, however, it may be significant to note

that the 9-cent figure covers the value of petroleum sulfonates, which today are selling to manufacturer-users around 12 cents per pound. In the post-war period these are likely to become the most aggressive competitors for the market served by soaps not only because of their low cost, but also because of the availability of raw material.

In passing, I believe that any important displacement of the use of animal and vegetable fats in soaps, by the use of petroleum and coal-tar derivatives in synthetic surface active agents, could have political repercussions. All soaps are processed from animal fats and vegetable oils, both of which are farm products. The money received for these fats and oils is an important item in farm income. To the extent that hydro-carbons replace domestic fats and oils in surface active agents, the American farmers' market for fats and oils will shrink proportionately. The extent of the repercussions in Congress is anybody's guess, but it may be significant to note that the farmers and the renderers in the past have shown concern regarding fat imports, to the extent, among other things, of having a 3 cent per pound excise tax put on the first domestic processing of Philippine coconut oil. History might repeat itself with respect to hydro-carbon substitution for animal and vegetable fats and oils in surface active agents. At any rate, it makes interesting speculation.

WHILE I think it is clear that for maintenance cleaning, shampooing and hand-washing, potash soaps have a decided edge over synthetic surface active agents in both performance and cost, I am sure we are going to be faced with keen competition from these new products during the post-war period. We are entrenched, and firmly, and before any appreciable volume of business is lost, there is certain to be an aggressive struggle. We are alert to the situation, and as more is known about the new products, the better able both we and consumers will be to judge their merits. I am not at all pessimistic as to what the results will be. No matter how much money and sales

effort is spent on a new product, it still must meet the test of performance and economy. If the newcomers do not give as good all-around performance as potash soaps, or if they prove too costly, they will not be able to hold their try-out market no matter how much pressure is put behind them in acquiring it.

In spite of the anticipated competition from the new products in our field, I expect the demand for potash soaps to increase. Millions of new structures will be built, including many factories, schools, hospitals, office buildings, and theaters. As these new outlets and many others come into being, as our population increases, and as our standards of cleanliness and sanitation are raised, I think all of us can look forward to an expanding market for potash soaps. The development of new non-detergent uses for our products also will further increase our markets.

A realistic view of our competition on the one hand and our sales potential on the other leads me to believe we can improve our situation materially by spending more dollars in sales research and promotion of our products. To get larger potash soap volume, isn't it just good sense on our part to pay as little attention to competitive products as possible other than to know their weak as well as strong points, and to devote as much attention as we can to developing and promoting the use of our own products, in both old and new fields of use? Will not each of us be better off if individually we do the following:

1. Improve the quality of our products by the most advanced formulation and manufacturing methods;
2. Develop and adhere to the kind of enlightened merchandising policy that will enable us to maintain quality standards;
3. Exchange experiences, ideas and opinions with each other through meetings to be held under the auspices of the Potash Soap Division; and
4. Promote the widest possible use of our products.

These things, if done, should enable us to look forward with confidence to an expanding potash soap market no matter how many new synthetic surface active agents are sold or how much pressure is put on their distribution.

Questions Answered by Mr. Kranich

(Statement by Member of Audience): Your paper was primarily a comparison of potash soap with synthetic detergents. I think that one important fact in line with the suggestion at the end is the realization that some of the synthetic detergents can be manufactured for specific operations. For instance, you speak of the advantage of potash soap for emulsifying and rinsing rather than by penetration. I think we should pay some attention to some of these synthetic products as additions in small proportion to potash soaps because they can be tailor-made, as fatty acids are tailor-made, to increase emulsification. Or we can make synthetic detergents which have primarily foam value. We should, as mentioned, look into some of these specific products as additives to enhance the properties of rinsability, emulsification, and foaming. While the petroleum sulfonates do not possess all of these characteristics, we should look into these synthetic detergents carefully.

(Another Statement): We have had occasion in the early days of using fatty acids to try to aid the soap by addition of wetting agents. We have never found much of an improvement. It was detrimental to the soap. Primarily, the addition of a wetting agent in every case reduced the lather. As far as we could see in the small addition that was added to the soap we would not get the inherent showing of surface tension.

(Another Statement): I think it is a good point to bear in mind that there might be certain advantages of synthetic detergents that the potash soap people could use. Two specific things synthetic detergents seem to do would help soap. One, synthetic detergents reduce the viscosity of the heavy solutions, and they are easier to filter. Two, liquid soap with little coconut oil, if used in salt water, won't give any lather at all, but if you add a small percentage of synthetic detergent it gives a profuse lather, and it should be added.

Q. What is the rinsability of the wetting agent if you take a laboratory glass, let us say, as compared with

(Turn to Page 145)

SYNTHETIC DETERGENTS

In The Modern Tannery

EMULSIFYING, detergent and wetting agents have always found a wide use in the leather industry, but it is only within comparatively recent years that any products more efficient than sulfonated castor oil and ordinary textile soap have been available. There are now a number of the new synthetic agents in regular use in tanneries, and operatives are becoming skilled in the use of sulfated fatty alcohols, hydrocarbon sulfonates and other surface active compounds.

There are several processes in the light leather section of the leather industry which depend for their efficiency on the use of emulsifying, detergent and wetting auxiliaries. In some cases it is necessary to effect the emulsification of grease and dirt so as to secure their easy removal from the surface of the leather, fur or wool, and in others, it is required to obtain uniform deep penetration of oleaginous mixtures and therefore thorough emulsification of the constituent fats. Soap and sulfonated oils have their limitations, and experience with the new agents show that they are able to disperse lime soaps and to retain their surface activity in the presence of acids, alkalies and common salt. Moreover, they possess greatly superior emulsifying properties to both hard and soft soaps and sulfonated castor oil.

Woolskins require thorough scouring before tanning so as to remove all the grease and dirt from the fibers and to leave them soft and lustrous. Unless all impurities are removed from the wool, the skins lose much of their attractiveness when dressed for rugs and slipper work.

Sulfated fatty alcohols are now commonly employed for cleansing raw and partially dressed woolled sheepskins. The skins are first soaked in

warm water and then paddled in a solution containing 3-5 lb. of the sulfated fatty alcohol and 1-2 lb. soda ash in 100 gallons of warm water (85-105 deg. F.), followed by further treatment for 20-30 minutes in a solution of 3 lb. of the alcohol per 100 gallons. The skins are then rinsed thoroughly either in running water or with the hose. The advantages claimed for sulfated fatty alcohols chosen for use in cleaning woolskins are their ready solubility in water; stability to dilute acids and alkalies and stability to hard water. In the last respect it is found that under certain conditions, calcium derivatives are liable to be formed, but as these are held dispersed in fine suspension they do not agglomerate to form scums of sticky precipitates. Sulfated fatty alcohols can be chosen which retain their detergent and emulsifying properties in salt solutions and also in the presence of aqueous solutions of such salts as alum, potassium titanium oxalate, copper sulfate, chromium salts, etc.

The same type of sulfated fatty alcohol used for scouring woolskins is frequently used for fatliquoring. Here it is required to introduce a large quantity of fatliquor into the leather without leaving an objectionable greasiness on either grain or flesh. In modern tannery practice, sulfated fatty alcohols are used in conjunction with sulfonated codliver oil and as much as 12-15 per cent of this valuable feeding agent can be incorporated into gloving leather without any grease showing on the surface of the leather.

Sulfated fatty alcohols are finding use for the scouring of leather to remove slight surface greasiness prior to dyeing. This is particularly important in the case of crust semichrome or mordant chrome leather for shoe uppers. With these leathers it is essential

By Paul J. Smith

that even shades should be obtained during dyeing so as to reduce the amount of finishing required. This is not possible if the grain layer is clogged with grease. It is not claimed that sulfated fatty alcohols carry out any degreasing of the leather, but it is known that they effect a thorough emulsification of the grease and so prevent uneven deposits.

Another very interesting application found for sulfated fatty alcohols is in the tucking liquors employed by chamois and aldehyde dressers. Alkaline solutions are usually employed for tucking and at boiling temperature the free alkali causes a certain weakening of the fibers due to intensive hydrolysis of the collagen complexes. Dispersions of sulfated fatty alcohol are perfectly neutral and therefore much less liable to injure the leather at the high working temperature.

Sulfated fatty alcohols and other ionic surface active agents combine with collagen particularly on the acid side of the iso-electric point, moreover, although they are stable in the presence of weak acid solutions and concentrations of salt there is an appreciable lowering of emulsifying properties when used in acid and salt liquors. Experience has shown that the above compounds are not satisfactory for the degreasing of pickled pelts and, as there is a great need for efficient aqueous degreasing agents, considerable research has been carried out throughout the world to develop new and stable products. It has recently been announced that Imperial Chemical Industries Ltd., of Great Britain, have now perfected a non-ionic auxiliary



which is capable of removing all the grease from pickled pelts having a pH of about 2 and a fairly heavy salt content, usually 15 per cent by weight. The British product, known as "Corilene DG," is a brown mobile liquid, freely soluble in water. Its outstanding property is that it removes greases from the pelts efficiently under aqueous conditions of working, thereby showing to marked advantage over the usual method of degreasing with the aid of an organic solvent such as paraffin.

The procedure for degreasing is fairly simple. The skins are first drummed in a warm dry drum for 15 minutes, then 5 per cent "Corilene DG," heated to 30 deg. C., with live steam or by any other method, is then added through the hollow axle and drumming continued for 30 minutes, after which 100 per cent of a 3 per cent brine solution is added in portions over a period of one hour. The liquor is drained off and the goods washed several times with 3 per cent brine

solution. More rinses are necessary in this case than in the process of degreasing with paraffin. The recovery of grease from the drained-off liquors can be effected by boiling up with live steam and allowing to settle and cool overnight. The grease containing a certain amount of degreasing agent, can then be scooped off the surface and purified further if necessary.

It is certain that this non-ionic degreasing agent will prove most acceptable to tanners as by its use it will be possible to effect worthwhile economies in the preliminary processes and to produce a better leather. Although at present this new compound is only recommended for use with pickled sheepskins, it is likely that processes will soon be developed rendering it practical for use in degreasing other pelts.

There is an extensive market in the leather industry for new emulsifying, detergent and wetting agents and manufacturers are well advised to study the sales potential of this trade.

Not only are emulsifying agents required for the wet processes of manufacture, but also for the preparation of various types of finishes. Such products as diglycol stearate enable permanent suspensions of pigments to be prepared, and also ensure good emulsification of natural and synthetic waxes for finishes. There are various anti-foaming compounds in demand in the industry for reducing the surface tension of tanning and dyeing liquors and so preventing case hardening or ugly grain contraction. Indeed, a thorough market survey of the leather industry will reveal many possible uses for both ionic and non-ionic auxiliaries.

The quantity of any bleaching earth required to remove a definite amount of chlorophyll from an oil can be determined by evaluation of the ion adsorption properties of the bleaching earth. H. F. Hinnners, J. J. McCarthy, and R. E. Bass. *Oil & Soap* 23, 22-5 (1946).

RAW MATERIALS

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Army Soap to N. Y.

James S. McIntosh, in charge of soap procurement for the Army through the U. S. Army Quartermaster Corps has been moved to New York from former offices in Jersey City. The new soap procurement office along with some other Quartermaster departments is now located at 111 East 16th St., New York.

Bims Set Golf Dates

Bims of New York have set three golf dates for the 1946 season. According to Martin F. Schultes of Hewitt Soap Co., chairman of the New York group, these golf tournaments have been scheduled as follows: Thursday, June 22, at Baltusrol Golf Club, Short Hills, N. J.; Tuesday, August 13, Winged Foot Golf Club, Mamaroneck, N. Y.; Friday, September 13, Wheatley Hills Golf Club, East Williston, Long Island. Further details will be announced at a later date.

Cancel Potash Soap Meeting

The Program Committee for the Potash Soap Division of the Association of American Soap and Glycerine Producers announced early this month that its plans for a meeting in Chicago, tentatively scheduled for June 6, have been cancelled. Instead the Program Committee planned to have a meeting of its own members early in May.

Knox Heads Macy Drug Dept.

Samuel Knox, who recently rejoined R. H. Macy & Co., New York, after nearly five years service with the U. S. Navy, has been appointed manager of the drug department, succeeding Marcus Salzman, resigned, the company announced last month. He has been with Macy's since 1933, and has held executive positions in several departments including the drug department. For a short while, he was con-



ROBERT E. HEALY

C-P-P Elects Two New V.P.'s

Two new vice-presidents were elected at the recent annual meeting of the board of directors of Colgate-Palmolive-Peet Co., Jersey City, N. J. Robert E. Healy, who has been with the advertising department since 1934, and who was appointed advertising manager in 1942, has been elected vice-president in charge of advertising. Before joining Colgate-Palmolive-Peet, he was a member of the advertising department of Johns-Manville Corp., New York.

nected with Supremacy Products, Macy's wholesale drug and cosmetic subsidiary. A graduate of Yale University, where he received his B.S. degree in economics, Mr. Knox was called to active duty as an ensign in May, 1941. He was released from active duty in September, 1946, with the rank of lieutenant commander.

Industrial Soap Div. Meets

The Industrial Soap Division of the Association of American Soap & Glycerine Producers held a meeting at the Sky Top Club, Cresco, Pa., April 11th in connection with the meeting of the Laundry and Cleaners' Allied Trades Association.



HUGH R. MacMILLAN, JR.

The other new vice-president is Hugh R. MacMillan, Jr., who was named to the post of vice-president in charge of production. He joined the company in 1941 as chief industrial engineer. Later, he became superintendent of the Jersey City plant, and following that, domestic production superintendent. In 1945 he was appointed general superintendent of the company, which position he held until his recent election to vice-presidency. Mr. MacMillan attended the University of Missouri.

C. D. & C. A. Holds "Garden Party"

The Chicago Drug and Chemical Association held its 18th Annual Spring Garden Party in the grand ballroom of the Drake Hotel, Chicago, the evening of April 27. A reception preceded the dinner.

P. & G. Test "Prell," New Shampoo

Procter & Gamble, Cincinnati, are reported market-testing "Prell," a new shampoo product that is packed in a tube. It is being promoted via regional newspapers and radio programs, although it is believed it will be some time before the product is advertised on a national basis.

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Detergents at Restaurant Show

BETTER Dishwashing was the theme of a panel discussion of the sanitary phase of restaurant operation included in the three-day program of the National Restaurant Association's 27th annual convention in Chicago late in March. Formal speakers included Prof. W. L. Mallman, noted bacteriologist at Michigan State College, East Lansing, Mich.; Dr. Nathan Sinai, Professor of Public Health, Univ. of Michigan, Ann Arbor; and Walter F. Snyder, executive director, National Sanitation Foundation. Featured at the session was the first public showing of a motion picture, "Dishwashing Dividends," produced for Economics Laboratory, St. Paul, Minn.

Exhibitors of sanitary chemicals in the Stevens Hotel's exposition hall were Economics Laboratory; the Dubois Co., Cincinnati; Pittsburgh Chemical Laboratories, Pittsburgh; Turco Products, Inc., Los Angeles; and Wyandotte Chemical Corp., Wyandotte, Mich. Several grocery jobbing houses also displayed private brand cleaning products in their exhibits.

Chief attraction in the Economics Laboratory booth was a model of their new electronic dispenser for automatically controlling the quantity of cleaning compounds flowing into mechanical dishwashers. Production of the device on an extensive scale will be started when necessary materials are freely available. R. A. Harland, Chicago district manager, stated. Others who staffed the booth were E. V. Osborn, vice-president and general manager, Paul Evans, general sales manager, and E. O. Briel, traveling supervisor.

Wyandotte Chemical Corp. displayed a new product, "Neo Suds," for cleaning glassware and silverware; also their "Keego" cleaner for mechanical dishwashers; "F-100" for floor and wall cleaning; "Steri-Chlor" for germicidal treatment and other specialized cleaning materials. G. T. Robinson, Chicago regional manager, was in charge, assisted by R. M. Leich, Chicago salesman and Harry Right-

mire, from the Wyandotte headquarters.

T. V. Dubois, president of the Dubois Co., received visitors at their booth, assisted by Louis Lerner, secretary-treasurer, Clyde Hargadine, western sales manager, Todd Francis, Chicago district manager, and others from the company's staff of field salesmen. Products displayed by this 25-year-old sanitary chemical concern included "K O L" dishwashing compound, "Actex," a detergent for kitchen floors, and "Neutraloid," a concentrated dehydrated soap for use in a dispensing type drum.

Turco Products, Inc., featured "Thoral," a year-old product for sterilizing dishes and glassware; "Activ" for washing floors, "Handisan," a powdered hand soap and other items, and explained their service program conducted from offices and warehouses in the principal cities. George Keane, Chicago district manager, in charge, with fieldmen from nearby Illinois, Indiana and Wisconsin territories.

An exhibit of their one-month-old "Deep Fatfry" cleaner attracted large crowds to the Pittsburgh Chemical Laboratory's booth, where George E. Schmidt, president of the concern, explained how the new product acts in removing old, burnt-on grease and carbon from the frying kettles. A representative display of the company's 120 different chemical sanitation products was shown on an illuminated revolving turn table and stress was laid on "Meta-suds" formerly available only in bulk but now newly packaged in small lots for home use. Dr. Emil Lermy, 71-year-old authority on public sanitation, recently retired as advisor to the company, was on hand to renew old acquaintance and keep in touch with developments in restaurant sanitation.

Western Pa. Renderers Elect

The following officers were recently elected at the annual meeting of the Western Pennsylvania Renderers Association, Pittsburgh, for the com-

ing year: President, E. J. McGrael, S. Strunz & Son; vice-president, R. P. Thomas, Pittsburgh Melting Co., and secretary-treasurer, William T. Womsey, Wm. H. Wormsley Co., all of Pittsburgh.

Natl. Chem. Show Sept. 10-14

Plans for the National Chemical Exposition, to be held at the Chicago Coliseum, Sept. 10 to 14, provide for a repeat presentation of the "Chemical Trail Blazers" exhibit which proved such a popular educational feature of the 1944 exposition. Entries are being invited for a display of the most outstanding contributions of new ideas, new discoveries, new developments and new applications in industrial chemical progress in the past two years. Detailed information can be obtained from the exposition office, 513 S. Wabash Ave., Chicago 5, Ill., or from the chairman of the "Trail Blazers" committee, Dr. James K. Stewart, care Sherwin Williams Co., 115th St., and Cottage Grove Ave., Chicago, 28. As in the past, the exposition is being sponsored by the Chicago section of the American Chemical Society.

MM&R Set Up Yale Fellowship

Establishment of a fellowship in the graduate department of Chemical Engineering at Yale University by the Northeastern Wood Utilization Council, and sponsored by Magnus, Mabee & Reynard, Inc., New York, was announced last month. Recipient of the two year fellowship is Edwin O. Guernsey, who will work under the direction of Dr. Barnett F. Dodge, head of the department of Chemical Engineering. The topic for investigation will be "Chlorophyll and Other Extractives from Green Plants and Leaves". The economic extraction of these materials for medicinal, deodorizing and food purposes will be studied.

Forms New Company

Formation of a new chemical manufacturing company to be known as Blue Grass Chemical Manufacturing Co., at 175 Bassett Ave., Lexington, Ky., was announced last month by Leon Freed, chief chemist. The new company will manufacture soaps and other chemical specialties.

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Above, left and right, are B. S. Van Zile of Hercules Powder Co., Wilmington, and J. C. Harris, Monsanto Chemical Co., Dayton, Ohio, chairman and secretary, respectively, of Committee D-12 on Soaps and Detergents, A.S.T.M. The new officers were elected at the recent meeting of Committee D-12 in New York.

Accountants Hear Siddall, P & G

Kelly Y. Siddall, comptroller of Procter & Gamble Co., Cincinnati, addressed the St. Louis Chapter of the National Association of Cost Accountants, April 9, at the Coronado Hotel. Mr. Siddall's subject was: "Budgeting—A Case Study." Raymond E. Burlew, accountant for Monsanto Chemical Co., St. Louis, was chairman of the meeting, which was attended by 250 industrial accountants, public accountants, controllers and chief accounting officers in the greater St. Louis industrial area.

Ruedig Heads Chi. Drug Assn.

Dale F. Ruedig, associate director of sales for Eli Lilly & Co., has been elected president of the Chicago Drug and Chemical Association. Other officers are Joseph A. Gauer, of Fritzsche Bros., vice-president; Talmadge B. Tribble of Magnus, Mabey & Reynard, secretary, and John J. Walsh, of Walsh Laboratories, treasurer.

New Cowles Felt Detergent

A new special paper mill felt washing detergent called "Nu-Nap," was announced recently by Cowles Detergent Co., Cleveland. There are two grades of the new detergent: "Nu-Nap" for washing on the paper machine and "Nu-Nap Special" for use on or off the machine. It is claimed to be equally effective in either hard or soft water, washing clean, rinsing

freely and leaving felt soft and absorbent. Additional information concerning the new product may be obtained by writing the paper chemical division of the company at 7016 Euclid Ave., Cleveland 3.

New Pennsalt Spot Remover

The development of a new paint, oil and grease remover for use in laundry or wet cleaning operation was announced recently by Pennsylvania Salt Manufacturing Co., Philadelphia. The new product, "Erusto Solvent," it is claimed, can be completely removed by rinsing or washing in water. The company further claims that the new product will remove oil, grease, paint and other obstinate stains from fabrics. The product is packaged in one gallon cans.

Plan Toiletries Trade Show

The Chicago Associated Toiletries Salesmen are planning a trade exposition, to be held at the Palmer House, Chicago, Aug. 19 through Aug. 28. An entire floor of the hotel has been reserved for exhibitors and reservations are being received by Robert Edmonds, secretary of the group, at his office with the J. V. Pilcher Mfg. Co., 55 E. Washington St., Chicago. Mr. Edmonds is being assisted in promotion of the project by W. R. Tenney, of Lentheric, Inc., one of the original founders of the exposition which was suspended last year due to war-time conditions.

A.O.C.S. Program Set

Among the papers to be presented at the 27th annual meeting of the American Oil Chemists' Society, Roosevelt Hotel, New Orleans, May 15-17, announced recently are the following: "The Spectrophotometric Determination of Glycerol" by Laurence R. Whyte, Colgate-Palmolive-Peet Co., Kansas City, Kan.; "Diffraction Patterns of Two Crystalline Forms of Oleic Acid," by E. S. Luton, Procter & Gamble Co., Ivorydale, O.; "Solvent Extraction of Oil Seeds," by W. H. Goss, Northern Regional Research Laboratories, Peoria, Ill.; "A New Approach to the Glyceride Structure of Natural Animal Fats," by K. F. Mattil and F. A. Norris, Swift & Co., Chicago; "Determination of Trisaturated Glycerides in Lard, Hydrogenated Lard and Tallow," by F. E. Luddy and R. W. Riemenschneider, Eastern Regional Laboratory, Philadelphia; "A New Series of Fat Soluble Fungistatic and Fungicidal Esters and an Interpretation of their Mode of Action Against Common and Pathogenic Molds," by S. W. Arenson and E. G. Heyl, Doughnut Corp. of America, Ellicott City, Md., and "The Countercurrent System in Soap Making," by William J. Govan, Jr., Wurster and Sanger, Inc., Chicago.

Reports of technical and administrative committees and of officers will be given at the annual meeting of the group, and new officers will be elected for the coming year. The customary golf tournament was to be held on May 16, and the annual dinner on the 17th.

Detrex Advances L. C. Kroes

L. C. Kroes, manager of the Michigan division of Detrex Corp., Detroit, has been appointed manager of central regional sales, the company announced April 16. He has been with Detrex since 1937, serving as a representative in the eastern region for three years until he returned to manage the Michigan division. Mr. Kroes is a graduate of the University of Michigan and is a member of the American Electroplaters Society. His headquarters will be in Detroit.

Dahle Joins Bristol-Myers

Dr. Dan Dahle, former U. S. Food and Drug Administration official, has been appointed research director at the Hillside, N. J., plant of Bristol-Myers Co., New York, the company announced late last month. He had been connected with the Food and Drug Administration for 18 years before resigning to become associated with Bristol-Myers. He is a graduate of Chalmers Institute of Technology, Gothenburg, Sweden, and American University, Washington, D. C. He entered government service in 1928 as chief chemist at the Savannah, Ga., laboratory after having been assistant state chemist in Florida for four years. He transferred to the Washington, D. C., laboratory as research chemist in 1932 and for the past eight years has been head of the cosmetic division.

A. E. Bailey Joins Girdler

Alton E. Bailey, well known authority on processing of edible fats and oils and author of "Industrial Oil and Fat Products," has joined the technical staff of the Votator division of Girdler Corp., Louisville, Ky. He heads one of the division's important research and engineering groups, specializing in the development and improvement of processes and products in the edible fats and oil field. A native of Midland, Tex., and a graduate with a B.S. degree in Chemical engineering of the University of Mexico, Mr. Bailey began his career in the Omaha laboratories of Cudahy Packing Co. in 1929. From 1941 until he resigned to take his new post, he was engaged in research in the edible fats and oil field in the Southern Regional Research Laboratory of the C.S.D.A. in New Orleans.

Brooks Resigns From Coty

Herman L. Brooks, president of Coty, Inc., New York, resigned from the post, it was announced recently. Mr. Brooks, who is also president of the Toilet Goods Association, will not stand for reelection of that group after having been president since its organization ten years ago. However, the TGA has named Mr. Brooks honorary chairman of the association's board of direc-

tors for as long as he remains a board member. His future plans are unannounced as yet.

Herman Jergens, 88, Dies

Herman Jergens, 88, co-founder of Andrew Jergens Co., Cincinnati, died there April 29. He came to the United States from Denmark in 1861 and with his brother, the late Andrew Jergens, founded Andrew Jergens Co.

Armour Employee Killed

Joseph Klein, an employee of the Armour Soap Works, Chicago, died April 7 from injuries suffered when a kettle of raw soap boiled over, according to police reports.

Fanning Leaves Malmstrom

Frank G. Fanning, affiliated with N. I. Malmstrom & Co., Brooklyn, for the past 26 years, recently resigned as junior partner and sales manager. Mr. Fanning's future plans are unannounced as yet.

New Cleaners at Medical Show

Protective and preventive products for treating occupational skin diseases were displayed by four sanitary chemical manufacturers at the 31st annual meeting of the American Association of Industrial Physicians and Surgeons and allied medical groups in Chicago, April 7 to 13.

John H. Breck, Inc., manufacturing chemists, Springfield, Mass., presented their new line which includes "Breck's" hand cleaner, "Breck's pH 7" protective cream, a water resistant cream and a work cream. The company, which manufactures beauty shop products, started production of these industrial creams for control of dermatitis during the war, Lester L. Brossard, Chicago district representative, stated and, finding a ready consumer acceptance, is planning an extensive post-war promotion through national advertising.

Stepan Chemical Co., Chicago, presented their "pH 6" sulfonated oil skin cleaner with on-the-spot demonstrations in a large industrial wash fountain. A. C. Stepan, Jr., president

New Alrose Detergent

Alrose Chemical Co., Cranston, R. I., is currently distributing a two-page technical bulletin on its new "Alrosene PD" synthetic detergent. Recommended for household and textile uses, the new detergent is claimed to have unusual lime resistance properties, permitting its use in sea water. Among the suggested uses for the new detergent are: dishwashing, laundering, upholstery and rug shampoo, general household cleaning and for bath use. It may also be used for a number of industrial applications.

D.C.A.T. Luncheon May 22

The Spring Luncheon meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trade will be held Wednesday, May 22, in the Georgian Room of the Hotel Pennsylvania, at 12:30 p.m. Carson Gray Frailey, D.C.A.T. Washington representative, will discuss "Unification of Food, Drug and Cosmetic Laws and Regulations."

of the company, whose principal products are sulfonated oils for industrial processes, was in charge of the presentation.

West Disinfecting Co., Long Island City, N. Y., displayed its complete line of personal safeguards against occupational skin diseases, with emphasis on "Lan-O-Kleen," a lanolin superfatted cornmeal scrubber and "Sulpho," hand cleaner, a sulfonated castor oil liquid cleaner. Other sanitation products from the company's general line were also shown. Wm. Flotow, advertising manager, came out from eastern headquarters to assist Glen Buerki, Chicago territory manager, at the booth.

G. H. Packwood Mfg. Co., St. Louis, showed their "Pax" line of six types of skin cleaners, including "Pax-lanosav," heavy duty granulated cleanser, and "Pax" sulfonated oil skin cleanser. Also displayed was the company's chromium plated soap dispenser and a Hecto-ink remover for office workers' hands. Marion S. Gravely, general sales manager, St. Louis, in charge, assisted by field representatives from nearby territories.



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Du Pont Isobornyl Acetate is water-white, alkali-resistant, non-discoloring . . . its low price and reliable quality make it the economical base for your use . . . and it's readily available in any desired amount for your immediate needs. Whatever the product, whatever the fragrance, see Du Pont early. You can always depend on Du Pont. E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Aromatics Section, Wilmington 98, Del. Branch offices: Boston, Charlotte, Chicago, New York, Philadelphia, Providence, San Francisco.

du pont aromatics

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REG. U. S. PAT. OFF.

KRANICH SOAPS

CONCENTRATED

LIQUID SOAP
SHAMPOO

☆ ☆ ☆ ☆ ☆

POWDERED SOAPS

Pure Coconut
U.S.P. Castile

☆ ☆ ☆ ☆ ☆

POTASH SOAPS

Soft Potash 40%
U.S.P. XII Green

☆ ☆ ☆ ☆ ☆

Kranich Soap Company, Inc.

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KRANICH SOAPS



New and interesting opportunities for organic synthesis and product improvement have been made possible by Niagara through the introduction of a fully chlorinated tetra chloro phthalic anhydride. This remarkably versatile chemical, for which Niagara has developed a special manufacturing process, possesses unique properties that can be put to practical advantage in the processing of dyes, esters, synthetic rubbers, pharmaceuticals, insulating materials, fungicides, protective coatings, lubricants, synthetic resins. Our research laboratories and technical staff are prepared to help you find ways to use this chemical formula practically and profitably.

*An Essential Part of America's
Great Chemical Enterprise*

Niagara Alkali Company

CAUSTIC POTASH • CAUSTIC SODA • PARADICHLOROBENZENE • CARBONATE OF POTASH • LIQUID CHLORINE • NIAGATHAL



60 EAST 42nd STREET • NEW YORK 17, N.Y.

Gillam to Run For Congress

Earnest O. Gillam, head of Gillam Soap Works, Fort Worth, Tex., has announced his candidacy for Con-



E. O. GILLAM

gress from the twelfth district of Texas to succeed the Hon. Fritz C. Lanham, who is retiring. This is the first time Mr. Gillam has ever run for public office, although he has been active in politics for a good many years. He is an active exponent of release of industry from unnecessary government restrictions and a return to a free economy. In 1931, he took over the old Chemical Products Co. in Fort Worth, reorganized it under its present name and developed it into a modern soap making plant. Mr. Gillam will be 62 years old on July 24.

Babbitt Building in Chicago

B. T. Babbitt, Inc., manufacturers of sanitary cleaning compounds, is erecting a plant at 6235 W. 65th St., Chicago, to be used as its western manufacturing headquarters.

Wyandotte Advances Burchfield

Transfer of Dr. Paul Burchfield to the technical service department of Wyandotte Chemicals Corp., Wyandotte, Mich., and his appointment as assistant director, were announced by the company last month. He has been assistant supervisor of the chemical engineering section of the company's research departments since 1942. After receiving his doctor's degree from Western Reserve University in 1934, he was with Harshaw Chemical Co., Cleveland, for four years. From

1938 to 1942 Dr. Burchfield was research engineer for United Gas Improvement Co. In his new post he assists Charles S. Johnson, director of technical service, who has been with the company since 1907.

T.G.A. Meets May 15-17

Highlights of the three-day annual meeting of the Toilet Goods Association, to be held Wednesday, Thursday and Friday, May 15, 16 and 17, at the Waldorf-Astoria Hotel, New York, include a symposium on essential oils and aromatic chemicals, and discussions of such raw material shortages as fats and oils, as well as talks on scientific developments. Participating in the Wednesday morning, May 15, round table discussion of perfuming materials will be: Joseph M. Huisking, Fritzsche Bros., Inc.; Francis T. Dodge, Dodge & Olcott Co.; R. M. Stevenson, Givaudan-Delawanna, Inc., and A. L. van Ameringen, van Ameringen-Haebler, Inc., all of New York. Stephen L. Mayham, executive vice-president of the association will preside. The Scientific Research and Standards report will be presented on the afternoon of Wednesday, May 15. At the Friday session, a paper on "A New Method of Analysis of Glycerin and Glycol Fatty Esters" by A. Troy and A. C. Bell, research and analytical chemist, respectively, Colgate-Palmolive-Peet Co., Jersey City, N. J., was presented. N. N. Dalton of the Association of American Soap & Glycerine Producers, was to speak on the fats and oils shortage.

List C.P.S. & E. A. Golf Sites

The Chicago Perfumery, Soap & Extract Association will hold five golf tournaments during the coming season, it was announced April 12. Although no dates have been announced by the Association as yet, the group will join the Chicago Drug and Chemical Association in an outing at Midlothian Country Club, May 21. Clubs where the Chicago Perfumery, Soap & Extract Association expects to hold tournaments include: Skycrest, Olympia Fields, Medinah and Rolling Green.

Reception for Andre Firmenich

A reception in honor of Andre Firmenich of Firmenich et Cie., Geneva, Switzerland, was given by Rupert



ANDRE FIRMENICH

Watson, manager of the New York branch of the company, Firmenich & Co., at the Gramercy Park Hotel, New York, May 2. Mr. Firmenich, who was on his first visit to the United States since 1941, flew back to Switzerland May 5. Mr. Firmenich indicated that while his concern is still faced with some difficulty in obtaining adequate supplies of raw materials, the manufacture of perfuming materials in Switzerland is rapidly approaching a normal basis once more. Firmenich was one of the few European houses able to maintain uninterrupted deliveries of perfuming materials to the United States through the war years. They shipped for a time from the Italian port of Genoa, and after this exit was closed were able to devise means of transit across France, Spain and Portugal for exit from the port of Lisbon. The company's creative work, under the direction of Dr. Roger Firmenich, continued through the war years, and an important development, a synthetic civetone said to be identical in performance with natural civetone, will appear on the American market in the fall.

New Nielco Acid Cleaner

Nielco Laboratories, Detroit, announced May 2 the issuance of a new data sheet on "Nielco 1931-M," a new acid cleaner for stone, glass, asbestos shingles, etc.

Resinoid Benzoin Synthetic 3521

by



Scientifically synthesized —
replaces high quality Siam
material on a more econo-
mical basis

•

100% soluble—leaves no residue

SCHIMMEL & CO., INC.
601 WEST 26TH STREET
NEW YORK 1, N. Y.

NEW TRADE MARKS

The following trade-marks were published in the April issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Mark Applications

CINCH—This in upper case, extra bold, jumbo letters for glass cleaner. Filed Oct. 22, 1945 by Oceanic Chemical Co., Seattle. Claims use since Oct. 5, 1945.

DIRECTOIRE — This in upper case, extra bold letters for toilet soap. Filed Oct. 30, 1945 by Charles of the Ritz, Inc., New York. Claims use since Oct. 26, 1945.

BOILER MASTER—This in upper and lower case, extra bold, black letters for boiler scale preventive and remover. Filed July 31, 1945 by Le-Mont Manufacturing Co., Los Angeles. Claims use since 1935.

ELASTI-CURL—This in upper and lower case, bold, script letters for shampoo. Filed Aug. 25, 1945 by National Mineral Co., Chicago. Claims use since Aug. 18, 1945.

CORODEX—This in lower case, reverse letters on a lined background for chemical rust remover. Filed Oct. 10, 1945 by Allied Products Co., Chicago. Claims use since Feb. 28, 1945.

DERMOLATE — This in upper case, reverse letters on a solid black background in the form of a rectangle that runs uphill from left to right for skin detergent. Filed Nov. 5, 1945 by National Oil Products Co., Harrison, N. J. Claims use since Aug. 29, 1944.

NO-SECTS—This in upper case, extra bold letters for liquid and powder insecticides and insect repellents. Filed Oct. 25, 1945 by Associated Products, Inc., Chicago. Claims us since Sept. 19, 1945.

BLACK-OUT—This in upper and lower case, bold, script letters for in-

secticide. Filed Nov. 29, 1945 by Miami Products & Chemical Co., Dayton, O. Claims use since Oct. 2, 1945.

ATTACLAY—This in upper case, bold letters for insecticide carrier or diluent. Filed April 14, 1945 by Attapulgas Clay Co., Wilmington, Del. Claims use since Feb. 23, 1945.

TOP-HAT—This in lower case, bold, script letters within a circular design and above a drawing of a top hat, cane and gloves for shaving soap. Filed Mar. 15, 1945 by Charles M. Burt, Biloxi, Miss. Claims use since Sept. 22, 1945.

TARGET—This in upper and lower case, extra black, bold script letters across a target-like background for washing compounds. Filed Aug. 21, 1945 by Chemical Manufacturing & Distributing Co., Easton, Pa. Claims use since Apr. 1, 1939.

RASUROL—This in upper case, bold letters for shaving cream. Filed Nov. 9, 1945 by Alfred A. Flaster, New York. Claims use since Aug. 1, 1944.

SPUR—This in upper case, extra bold, black letters for toilet soaps. Filed Nov. 10, 1945 by Charles of the Ritz, Inc., New York. Claims use since Nov. 7, 1945.

QAC—This in upper case, extra bold, black letters for sterilizing material. Filed Sept. 24, 1945 by Walter S. Bachman, Los Angeles. Claims use since July 2, 1945.

QAC—This in upper case, bold letters on either end of which is the drawing of a duck for sterilizing material. Filed Sept. 24, 1945 by Walter S. Bachman, Los Angeles. Claims use since July 2, 1945.

BUBALOO—This in upper case, bold letters for liquid solution for blowing bubbles. Filed Oct. 29, 1945 by Lillian D. Rock, New York. Claims use since Sept. 25, 1945.

DIS—This in upper case, bold letters for general disinfectant. Filed Nov. 2, 1945 by David D. Catts, Long Island City, N. Y. Claims use since Oct. 16, 1945.

SULFOWL—This in upper case letters for antibacterial preparation. Filed Nov. 2, 1945 by Sharp & Dohme, Inc., Philadelphia. Claims use since Oct. 1, 1945.

ATOMIC — This in upper case, large and small, open letters for insecticide materials. Filed Dec. 3, 1945, by Lystad & Redick, East Grand Forks, Minn. Claims use since Aug. 10, 1945.

INDEED—This in upper case, extra bold, black letters for shampoo. Filed Dec. 4, 1945 by Ernst Peritz, New York. Claims use since Mar. 1, 1945.

FRAME—This in upper case, extra bold, black letters for shampoo. Filed Dec. 4, 1945 by Ernst Peritz, New York. Claims use since Mar. 1, 1945.

N-I-U — This in upper case, extra bold, black letters for insecticide. Filed Jan. 17, 1945 by Griffith Laboratories, Inc., Chicago. Claims use since Dec. 17, 1945.

BEAR BRAND — This in upper case, extra bold letters for silver polish. Filed June 4, 1945 by Dohrmann Hotel Supply Co., San Francisco. Claims use since June 1, 1945.

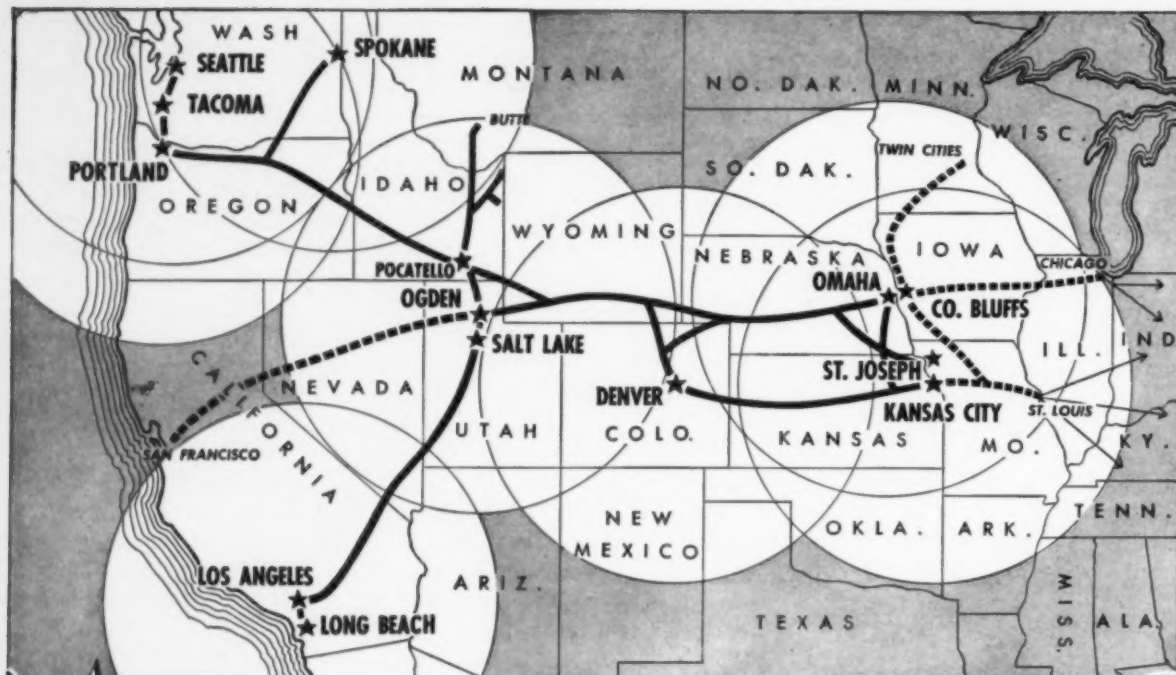
GOLDEN ARROW—This in upper case letters surrounding the fanciful drawing of a woman dressed as an ancient with a bow in her hand for shaving cream and bath soaps. Filed Oct. 31, 1945 by Golden Arrow Toiletries, New York. Claims use since Sept. 11, 1944.

MOTHER'S WHITE WASH—This in extra bold, black, upper case letters for washing compound. Filed May 16, 1944 by No-Boil Fluid Chemical Co., Jamestown, N. Y. Claims use since Nov. 21, 1933.

EXHILARATION—This in upper case, bold letters for shampoo. Filed June 11, 1945 by Henry W. Miller, Glendale, Calif. Claims use since May 29, 1945.

ATOMIC SPRAY—This in upper case, extra bold, black letters for insecticides. Filed Aug. 24, 1945 by Continental Distributors, Inc., Washington, D. C. Claims use since Aug. 16, 1945.

ATO-MIC—This in upper case, oversize, extra bold, black letters for insecticides. Filed Sept. 17, 1945 by



Opportunity for Industry

The western territory served by Union Pacific is rich in countless raw materials required by industry; has power and other necessary facilities; has a high type of native-born labor. Here lies the opportunity for industry to build and expand.

Among the principal industrial tracts owned or served by Union Pacific are those located in, or near by, the following cities:

Omaha, Neb.	Ogden, Utah
Council Bluffs, Iowa	Portland, Oregon
St. Joseph, Mo.	Seattle, Wash.
Kansas City, Mo.-Kans.	Tacoma, Wash.
(Fairfax District)	Spokane, Wash.
Denver, Colo.	Los Angeles, Cal.
Salt Lake City, Utah	Long Beach, Cal.

As the map shows, all these cities are located on the main lines of the Union Pacific Railroad.

The circles on the map indicate 500-mile distribution areas. In normal times, Union Pacific operates a fast, merchandise freight (L. C. L.) service within these short-haul areas, with door-to-door pick up and delivery service.

These industrial properties are improved and occupied by many diversified manufacturing and commercial enterprises.

Necessary utilities are available and each tract is served by adequate industrial trackage. Whenever required, additional trackage can be provided.

You are cordially invited to write W. H. HULSIZER, General Manager of Properties, Union Pacific Railroad, Omaha 2, Nebraska, regarding industrial districts in territory served by Union Pacific.

be Specific -
say "Union Pacific"



The Progressive

UNION PACIFIC RAILROAD

The Strategic Middle Route

X-Press Chemical Co., Brooklyn, N. Y. Claims use since Aug. 14, 1945.

SPRAYGRANCE — This in upper case, bold, stencil letters for liquid deodorant. Filed Sept. 20, 1945 by the Selig Co., Atlanta, Ga. Claims use since Nov. 1, 1944.

PYRENONE — This in upper case, bold letters for insecticides. Filed Nov. 14, 1945 by Dodge & Olcott, Inc., New York. Claims use since Feb. 27, 1945.

MORTEX—This in upper case, bold letters for shampoo and parasiticide. Filed Dec. 11, 1945 by Metropolitan Chemical Co., Albany, N. Y. Claims use since Sept. 1, 1944.

Trade Marks Granted

418,871. Liquid wax and polish for floors, furniture, etc. Filed by DaMar Chemical Products Co., Bridgewater, Mass., Sept. 18, 1944. Serial No. 474,318. Published Apr. 10, 1945. Class 16.

418,875. Detergent compound. Filed by Refined Products Co., Lyndhurst, N. J., Oct. 18, 1944. Serial No. 475,463. Published Nov. 6, 1945. Class 6.

418,907. Floor wax. Filed by Twin City Shellac Co., Brooklyn, Apr. 9, 1945. Serial No. 481,927. Published Oct. 16, 1945. Class 16.

418,918. Oil shampoo. Filed by C. E. Hoffman Co., Dallas, Apr. 27, 1945. Serial No. 482,679. Published Oct. 30, 1945. Class 6.

418,923. Cleaner and polish for leather articles. Filed by Knomark Manufacturing Co., Brooklyn, May 7, 1945. Serial No. 483,065. Published Oct. 23, 1945. Class 4.

418,924. Cleaner and polish for leather articles. Filed by Knomark Manufacturing Co., Brooklyn, May 7, 1945. Serial No. 483,066. Published Oct. 23, 1945. Class 4.

418,925. Shampoo. Filed by Metropolitan Chemical Corp., Albany, May 11, 1945. Serial No. 483,230. Published Nov. 6, 1945. Class 6.

418,932. Hand cleanser. Filed by Rose Dew Products Co., Los Angeles, May 15, 1945. Serial No. 483,386. Published Oct. 23, 1945. Class 4.

418,936. Brushless shave cream, shaving soap and shaving sticks. Filed

by Irene Blake Cosmetics, Inc., New York, June 2, 1945. Serial No. 484,-

418,939. Soap compound. Filed by Legrand Chemical Co., Brooklyn, 081. Published Oct. 16, 1945. Class 4. June 6, 1945. Serial No. 484,206. Published Oct. 23, 1945. Class 4.

418,940. Insecticides. Filed by Consolidated Exterminators, Inc., New York, June 7, 1945. Serial No. 484,-248. Published Nov. 6, 1945. Class 6.

418,952. Insecticides and fungicides. Filed by Sherwin-Williams Co., Cleveland. June 22, 1945. Serial No. 484,912. Published Nov. 6, 1945. Class 6.

418,960. Floor wax. Filed by Purity Dance Wax Co., Sedalia, Mo., June 27, 1945. Serial No. 485,072. Published Oct. 16, 1945. Class 16.

418,969. Shampoo. Filed by Associated Products, Inc., Chicago, June 29, 1945. Serial No. 485,189. Published Oct. 30, 1945. Class 6.

418,995. Insecticide-fungicide. Filed by McConnon & Co., Winona, Minn., July 12, 1945. Serial No. 485,-732. Published Nov. 6, 1945. Class 6.

418,562. Agricultural fungicide. Filed by Onyx Oil & Chemical Co., Jersey City, N. J., June 22, 1945. Serial No. 484,854. Published Oct. 16, 1945. Class 6.

419,104. Shoe polish. Filed by Rit Products Corp., Chicago, Mar. 1, 1945. Serial No. 480,387. Published Nov. 6, 1945. Class 4.

419,106. Shaving Cream. Filed by Bristol-Myers Co., New York, Masch 7, 1945. Serial No. 480,559. Published Nov. 13, 1945. Class 4.

419,122. Washing and cleaning compound. Filed by Sutho Suds Co., Indianapolis, April 25, 1945. Serial No. 482,597. Published Oct. 30, 1945. Class 4.

419,130. Soap. Filed by Great Stuff Products Corp., Chicago, Apr. 30, 1945. Serial No. 482,799. Published Nov. 6, 1945. Class 4.

419,131. Detergent for removing grease, oil, dirt, etc., from metals. Filed by Sofna Products, Inc., New York, May 2, 1945. Serial No. 482,-897. Published Nov. 13, 1945. Class 4.

419,141. Floor wax. Filed by G. E. Specialty Co., Brooklyn, May

18, 1945. Serial No. 483,523. Published Nov. 13, 1945. Class 16.

419,152. Cleaning compounds for general use. Filed by Scientific Supply Co., Denver, June 8, 1945. Serial No. 484,324. Published Nov. 6, 1945. Class 4.

419,154. Skunk extract for rodent repellent. Filed by William B. Ward Co., Kansas City, Mo., June 11, 1945. Serial No. 484,433. Published Nov. 13, 1945. Class 6.

419,188. Soap. Filed by John T. Stanley Co., New York, July 7, 1945. Serial No. 484,549. Published Nov. 6, 1945. Class 4.

419,328. Type cleaning fluid and typewriter platen surface cleaner. Filed by System Service Co., Paterson, N. J., May 2, 1945. Serial No. 482,-902. Published Nov. 20, 1945. Class 4.

419,356. Cleaning preparation for diapers. Filed by Allied Salt & Chemical Co., Boston, June 23, 1945. Serial No. 484,933. Published Nov. 20, 1945. Class 4.

419,457. Insect spray. Filed by R. M. Hollingshead Corp., Camden, N. J., July 26, 1944. Serial No. 472,640. Published Dec. 4, 1945. Class 6.

419,459. Antiseptic and disinfectant. Filed by William R. Warner & Co., New York, Aug. 10, 1944. Serial No. 473,166. Published Dec. 4, 1945. Class 6.

419,468. Antiseptic, disinfectant, deodorant and cleanser. Filed by Koppers Co., Inc., Kearney, N. J., Dec. 23, 1944. Serial No. 477,890. Published Nov. 27, 1945. Class 6.

419,478. Solution for mildew-proofing and mothproofing textiles, etc. Filed by Herbert J. Heribert, New York, Apr. 6, 1945. Serial No. 481,787. Published Nov. 27, 1945. Class 6.

419,486. Insecticide. Filed by Georgia-Carolina Oil Co., Macon, Ga., May 11, 1945. Serial No. 483,224. Published Aug. 28, 1945. Class 6.

419,499. Shampoo. Filed by Primrose House, Inc., New York, June 26, 1945. Serial No. 485,057. Published Nov. 27, 1945. Class 6.

419,511. Air disinfectants. Filed by George W. Fleischman, Long Beach, Calif., July 23, 1945. Serial
(Turn to Page 87)

announcing a new DOW specialty—

C-64

... TO WEAVE RICH PATTERNS IN FRAGRANCE !

Dow presents to the perfumer an attractive new specialty, C-64 . . . ready to add a note of opulence to many formulations for perfumes, soaps, cosmetics. C-64 possesses a powerful, spicy odor with a slightly minty touch, somewhat suggestive of patchouli oil. Blenders will find it extremely valuable for all types of oriental perfumes. It is also excellently adapted to the preparation of colognes and for inclusion in soaps and cosmetics.

A very stable, crystalline material, C-64 blends well with citrus oils and dissolves in alcohol, even when diluted. In purity and uniformity, it conforms to Dow's traditionally high standards. Write to us on your company letterhead for working sample and full details.

DOW AROMATIC PRODUCTS: Coumarin, Cyclotene, Diphenyl Oxide, Diphenyl Methane, Gardanthrol, Indol, Methyl Anthranilate, Methyl Phenyl Carbinyl Acetate, Methyl Salicylate, Palatone, Phenyl Ethyl Acetate, Phenyl Ethyl Alcohol, Styrene P-100, Sylvanol, and others—

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN
New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago • St. Louis
Houston • San Francisco • Los Angeles • Seattle

Synthetic
AROMATIC
Chemicals



CHEMICALS

INDISPENSABLE TO INDUSTRY

BIDS AND AWARDS

Treasury Soap Paste Bids

In a recent opening for miscellaneous supplies by the Treasury Department, Procurement division, Washington, D. C., the following bids were received on 15,840 lbs. soap paste: Cadet Laboratories, Worcester, Mass., 14 cents a pound; Flash Chemical Co., Cambridge, Mass., 5 cents a pound; R. M. Hollingshead Corp., Camden, N. J., 6.5 cents a pound; Mione Mfg. Co., Collingdale, Pa., 4.88 cents a pound; Wm. Messer Corp., New York, 6.35 cents a pound; Capital City Cleaner Co., Washington, D. C., 11.5 cents a pound in 2½ pound cans; and Utility Co., New York, 4.8 cents a pound.

Detergent Award to MacKensie

MacKensie Laboratories, Chester, Pa., received the award on 7,200 pounds of special detergent in a recent opening for miscellaneous supplies by the Freedman's Hospital, Washington, D. C. The MacKensie bid was 8 cents a pound.

N. Y. Navy Misc. Bids

Among the bids received in a recent opening for miscellaneous supplies by the New York Navy Purchasing Office, New York, were those on: (1) 88,433 tins of toilet bowl cleaning compound, R. M. Hollingshead Corp., Camden, N. J., 9.7 cents per 20-ounce can; Turco Products, Inc., Los Angeles, 11 cents per 22-ounce can; (2) 272,717 pounds dishwashing compound, MacKensie Labs., Chester, Pa., 5.75 cents a pound; B. P. Ducas Co., Jersey City, N. J., 5.35 cents a pound; (3) 583,313 pounds of scouring compound, Chemical Manufacturing & Distributing Co., Easton, Pa., 2.74 cents a pound; Industrial Distributors, New York, 4.8 cents; (4) 1,000 gallons of disinfectant, germicide and fungicide, including measuring device, Lehn & Fink Products Corp., Bloomfield, N. J., \$1.35 a gallon; Fine Organics, New York, \$2.76 a gallon; Winthrop Chemical Co., New York,

\$4.40 a gallon; Fuld Bros., Baltimore, \$3.35 a gallon and Onyx Oil & Chemical Co., Jersey City, N. J., \$4.08 a gallon, alternate bid of \$7.40 a gallon (10 times standard strength); and (5) 315,473 cans of liquid metal polish, J. L. Prescott Co., Passaic, N. J., 7.45 cents each; R. M. Hollingshead Corp., Camden, N. J., 7.85 cents each; Solarine Co., Baltimore, 9 cents each.

Misc. Agriculture Bids

Geigy Co., New York, submitted the only bid—\$96—on 200 pounds of DDT in a recent opening for miscellaneous supplies by the Division of Purchase, Sales and Traffic, U. S. Department of Agriculture, Washington, D. C. In the same opening the following bids were received on 36 barrels of sweeping compound: N. Brittingham & Sons, Philadelphia, \$8.03 a barrel; Joseph E. Frankle Co., Philadelphia, \$8; M. J. Gensberg & Son, Washington, D. C., \$8.50; Lasting Products Co., Baltimore, \$11.98 per 300 pound container; Mathers-Lamm Paper Co., Washington, D. C., \$8; Paxson Mfg. Co., Philadelphia, \$7.30 and Sweeping Compound Mfgs. of New York, New York, \$216 total.

Interior Dept. DDT Bids

The following bids were received on 1,000 pounds of technical DDT in a recent opening for miscellaneous supplies by the purchasing office of the Department of the Interior, Washington, D. C.: Monsanto Chemical Co., St. Louis, 50.52 cents a pound; Merck & Co., Rahway, N. J., 51 cents and Joseph E. Frankle Co., Philadelphia, 54 cents.

Agriculture Dept. Soap Awards

The following awards on laundry soap were announced in connection with recent special purchases by the Department of Agriculture, Production and Marketing Administration, Washington, D. C., for shipment under Lend-Lease, for U. S. territorial needs, UNRRA, etc.; Colgate-Palm-

olive-Peet Co., Jersey City, N. J., 6,000,000 pounds at 6.2 cents a pound and Kirkman & Son division, Colgate-Palmolive-Peet Co., Brooklyn, N. Y., 10,500,000 pounds at 6.25 cents a pound.

FWA Liquid Soap Bids

Among the bids submitted on 5,500 gallons of liquid soap in a recent opening for miscellaneous supplies by the Federal Works Agency, Public Buildings Administration, Office of Buildings Management, Washington, D. C., were those of: James Good Co., Philadelphia, 540 gallons only, 42 cents a gallon; Crystal Soap & Chemical Co., Philadelphia, 26 cents; Peck's Products Co., St. Louis, 27 cents; R. M. Hollingshead Corp., Camden, N. J., 34 cents; Wm. Messer Corp., New York, 38.3 cents; Joseph E. Frankle Co., Philadelphia, 43 cents; N. Brittingham & Son, Philadelphia, 49.9 cents, including drums, and Lanair Chemical Corp., Chicago, 36.9 cents.

Hand Cream Cleaner Bids

The following bids were received on 4,800 containers of hand cream cleaner: Autocopy, Inc., Chicago, 25 cents each; Cadet Laboratories, Worcester, Mass., 23 cents; Ditto, Inc., Washington, D. C., 30 cents; Duplicating Papers, Inc., New York, 30 cents; Guardian Chemical Co., Detroit, 40 cents; Kraye Mfg. Co., Elizabeth, N. J., 29.95 cents each; MacIntosh & Sheridan, Washington, 55 cents each; Millburn Co., Detroit, 31.25 cents; G. H. Packwood Mfg. Co., St. Louis, 30 cents a pound; Potomac Products Co., Washington, 27 cents each; Wilco, Washington, D. C., 30 cents, and L. C. Smith & Corona Typewriters, Washington, 39 cents.

Oxygen-Absorption Method

Specially designed apparatus and procedure are described for testing fats by the oxygen-absorption method. These were developed to reduce the labor required for testing numerous samples. Over a period of years they have given useful service. E. W. Eckey. *Oil & Soap* 23, 38-40 (1946).

*In a pinch,
we could do it*



Perhaps our artist is a bit enthusiastic about the versatility of Westvaco Cleaning Compounds. But, conversely our contributions to the soap, detergent and dry cleaning industries are generally just as greatly *underestimated*.

You, perhaps, will be surprised to learn that WESTVACO

- ...was America's first producer of TSP and TSPP
- ...was for 17 years America's sole producer of Acid Sodium Pyrophosphate.
- ...is also an important producer of fifteen other types and forms of phosphates
- ...is a principal supplier of alkalies to leading soap companies and a trusted source of supply of many well-known detergent mixtures, water softeners and cleaning specialties.
- ...supplies all three widely-used dry-cleaning solvents and originated one of the largest-selling chemical solvent-clarifiers.
- ...is an important producer of specialties for solvent degreasing (TROMEX)*, water-conditioning (REMOSIL)* and disinfectant-bactericidal applications (FOSKLOR)*

Yes, with notably few exceptions, WESTVACO CHEMICALS play a part in many types of domestic and industrial cleaning.

We will welcome your inquiry for information on the present availability of all of our chemicals and will do our best to cooperate with you.

*TMReg. U.S. Pat. Off.



WESTVACO CHLORINE PRODUCTS CORPORATION

405 LEXINGTON AVENUE, NEW YORK 17, N. Y.
CHICAGO, ILL. GREENVILLE, S. C. NEWARK, CALIF.

As of May 7, 1946

THE 36-day-old coal strike, with its paralyzing effect on the soap and sanitary chemicals industries, and almost all other economic life in the United States as well, completely dominates the market news this month. With coal tar chemical production reliably reported to be down by one-third several days before this writing, and with no sign of a settlement in the offing the situation is unmistakably grave. It not only affects the supply of raw materials used in the production of soap and sanitary chemicals, but also power for the plants where they are produced, the availability of metal in which to pack them and transportation to carry them to market.

In the case of soap, the stoppage of production of coal tar chemi-

cals strikes a blow at supplies of per-
fuming materials, and caustic soda
and soda ash. This hurts more than
ever at this particular time because
of the dearth of natural essential oils
and flower oils from abroad, and be-
cause of the greatly increased demand
for aromatics for soaps, etc. Several
alkali plants are reported to have
closed down due to the coal shortage.

Insecticides, disinfectants, an-
tiseptics, wood preservatives, etc. rely-
ing heavily on the by-products of the
coking operation feel any interrup-
tion in the supply of coal almost im-
mediately. Nor can the shortages be
overcome as soon as coal production
is resumed. Faced with a backlog of
orders since shortly after we shifted
to a war-time economy, coal tar chem-
ical producers were not able to catch
up with back orders even before the

present strike. In spite of a tapering
off of demands for coal tar chemicals
on the part of the military with the
ending of hostilities, the civilian in-
dustries demand took up where the
military had left off and expanded even
beyond the most optimistic dreams.

On another front, that of fats
and oils, the world shortage contin-
ues almost unabated. In their own
small way the Philippines seem to be
working to alleviate the shortage as
well as can be expected. Copra Ex-
port Management Co., Washington,
D. C., the procurement agency for the
Commodity Credit Corp. for copra in
the Philippine Islands, has just an-
nounced that exports of copra from
the Philippines in April amounted to
24,179 long tons, as compared with
13,332 long tons for March and 11,-
788 long tons for February. In Janu-

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ary, 8,342 long tons of copra were exported from the Philippines. In making this announcement, Copra Export Management Co. stated that all except 4,902 long tons of the April total, which was shipped to Italy for account of UNRRA, was exported to the United States.

Meanwhile, On April 23, the U. S. Department of Agriculture's Production and Marketing Administration, Fats and Oils Branch, announced to soap makers that future releases of coconut oil will be made when the oil is available for the companies who are entitled to allotments, rather than allotting it on a strictly quarterly basis. Since the liquidation of Government stocks of high lauric acid oils, the releases for the subsequent quarters are being handled according to a revised procedure and some confusion apparently exists in the minds of consumers as to the method being used, the Fats and Oils Branch states. Originally, it was thought that the soap maker could obtain in subsequent quarters the amount of high lauric acid oils to

which he was entitled and received in the first quarter. In its letter of Jan. 14, 1946, the Department of Agriculture stated that the oil allotted at that time could be used during any period the soaper chose, rather than in a specific quarter as had been the practice previously. This, apparently, led to confusion so the U.S.D.A. issued its letter of April 23 to clarify the situation. Release of coconut oil could be made at the beginning or at any time during a quarter, the letter explains.

Another oil development announced in April was the announcement by the U. S. Department of Agriculture of the continuation through June 30, 1946 of the suspension of restrictions on deliveries of crude cottonseed, peanut, soybean and corn oils to refiners for refining purposes, under War Food Order 29. Previously, the suspension had been continued through March 31, 1946. Authorization for delivery of these four crude oils to all other users, however, will continue to be obtained from the Fats and Oils branch of the Pro-

duction and Marketing Administration.

World supplies of fats and oils will remain short of demand this year and probably next. All recent reports indicate that recovery of exports from the Far East and production of animal fats in Europe will be gradual. Preliminary indications are that Antarctic whale-oil production in the current season is less than one-third of prewar. In Europe, the grain crisis will prevent any increase in animal-fat output this year.

In discussing the market on aromatic chemicals in the April issue of the *Givaudanian*, house organ of Givaudan-Delawanna, Inc., New York, the difficulties confronting the French essential oil industry are described as follows: "In addition to lacking solvents, fats and all other materials needed in the flower oil industry, the people of Grasse find that their soil is in extremely bad condition due to the lack of proper fertilizer during the last five or six seasons. The outlook, therefore, is for continued shortages and continued high prices for the 1946 harvest."

YES! AVAILABLE!!
BEAD FORM
SYNTHETIC DETERGENT
(Alkyl Aryl Sulphonate)

(Low Alkalinity—High Percentage Active Ingredient)

Specific Gravity—One (Approximately 10 times as bulky as soda ash.)

Supply Not Affected by Government Order Restricting Fat Use

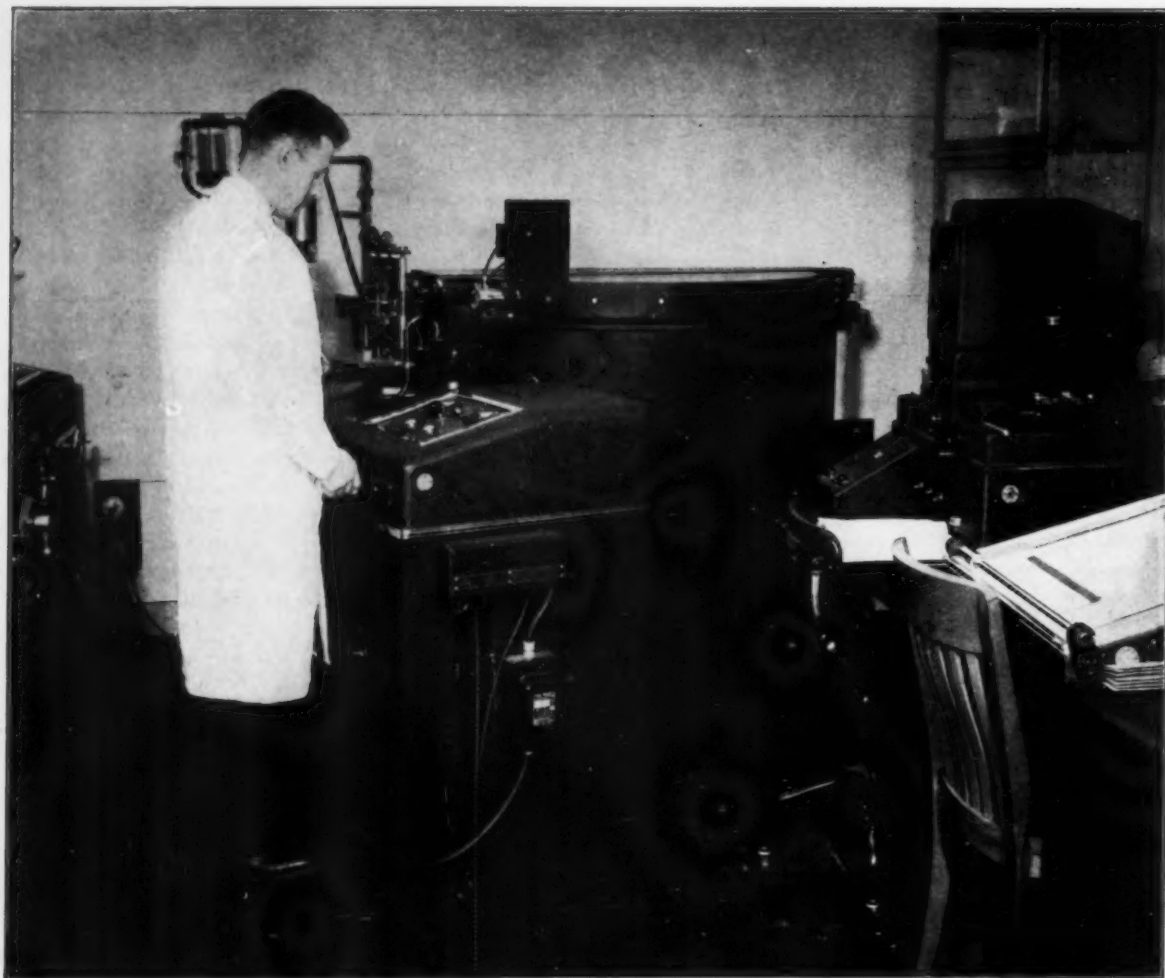
FOR FOAM-BULK-DETERGENCY
ALSO

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EAVENSON CHEMICAL CO.
(Formerly SANDERS-EAVENSON CHEMICAL CO.)

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The machine that looks inside steel for you

Quite a machine, this spectrograph at American Can laboratories at Maywood, Illinois.

First, the steel is heated in a high-energy electrical discharge until it gives off light.

Then it resolves this light into its component parts.

Finally it takes a picture of these component parts on photographic film. This is called the spectrum of the sample. This spectrum is just as characteristic of the steel as an indi-

vidual's fingerprints. It actually reveals the composition of the steel.

So then what?

Well, American Can scientists evaluate the spectrum and determine at once whether the sample meets established specifications.

Spectrographic analysis like this is an important part of American Can's quality control. Its purpose? To assure our customers that the steel in their containers will have the corro-

sion resistance it needs to do their specific container job.

Quality control in steel, thickness of tin plate, solder, sealing compounds, enamel, and all the countless steps in can manufacture are but a part of American Can's service to its customers.

There is marketing research, the design of lithographed labels, processing help—to mention only a few more services. Why not ask our representative for further details? Or write:

AMERICAN CAN COMPANY  New York • Chicago • San Francisco

WORLD'S LARGEST MANUFACTURERS OF FIBRE AND METAL CONTAINERS

The Element of Quality Is In Every Hooker Chemical

THERE'S a plus value for you in every Hooker Chemical. This is mighty important to you who are trying to maintain or improve quality of your product. That value is *dependable, uniform quality*. You can be sure that every shipment of Hooker Chemicals will be of the same high purity that meets your requirements. Uniform chemical supplies preclude the necessity of making costly adjustments in your process.

Listed below are some of the Hooker chemicals that are helping chemists in the soap and sanitary field maintain uninterrupted production. Technical data sheets giving chemical and physical properties and analyses are available when requested on your letterhead. Our Technical Staff is also ready to assist you in evaluating Hooker chemicals for your particular purposes.

Product Chemical Formula Molecular Weight	Hooker Specifications	Suggested Uses
Benzoate of Soda, U. S. P. and Tech. C_6H_5COONa ; 144.0	Benzoate of Soda.....99% Min. U. S. P. grade meets requirements of U. S. Pharmacopoeia XII.	Antiseptic in pharmaceutical and medicinal preparations, in tooth pastes and powders.
Benzoic Acid, U. S. P. and Tech. C_6H_5COOH ; 122.1	Benzoic Acid.....99.3% Min. U. S. P. grade meets requirements of U. S. Pharmacopoeia XII.	Ingredient of cosmetic creams, lotions and other pharmaceutical preparations antiseptics, dentifrices, dyestuff intermediates. Manufacture perfumes and pharmaceuticals.
Benzoyl Chloride C_6H_5COCl ; 140.5	Freezing Point °C.....-0.9 °C Min.	Manufacture of synthetic organic chemicals through Friedel-Crafts reactions to produce perfumes, dyes, pharmaceuticals. Manufacture benzyl benzoate and other esters.
Cyclohexanol (Hexahydro Phenol) $C_6H_{11}OH$; 100.1	Distillation Range High Grade.....4°C Max. Tech. Grade.....10°C Max. Cyclohexanol High Grade.....98% Min. Tech. Grade.....92% Min.	In manufacture of disinfectants, germicides and insecticides, perfume in soaps; solvent.
Methyl Benzoate (Niobe Oil) $C_6H_5COOCH_3$; 136.1	Distillation Range 2° incl.....199°C Ester Content.....99.5% Min.	Deodorizing material for soaps and in manufacture of perfumes.
Methyl Cyclohexanol (Hexahydro Cresol) $CH_3C_6H_{10}OH$; 114.1	Boiling Range.....25°C Max. Distillation....Start.....155°C Min. 100%.....180°C Max.	Perfume in soaps and as a mutual solvent to incorporate solvents and phenolic insecticides.
Orthodichlorbenzene (1:2 Dichlorbenzene) $C_6H_4Cl_2$; 147	Freezing Range.....-10° to -22°C Boiling Range.....6° including 179°C	Insecticide, solvent for natural and synthetic gums, tars, grease, oil, fats; ingredient of metal polishes, paint and varnish removers. Manufacture of pyrocatechin, dye intermediates, synthetic organics.
Sulfur Dichloride SCl_2 ; 103	Chlorine Content.....66% Min.	Chlorinating agent, in manufacture of organic acid anhydrides and in organic synthesis.
Sulfur Monochloride S_2Cl_2 ; 135	Chlorine Content.....50% Min.	Manufacture of insecticides, linseed oil substitutes, dye intermediates, pharmaceuticals, organic acid chlorides.



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Chlorine
Sodium Sulfhydrate

Caustic Soda

Sodium Sulfide

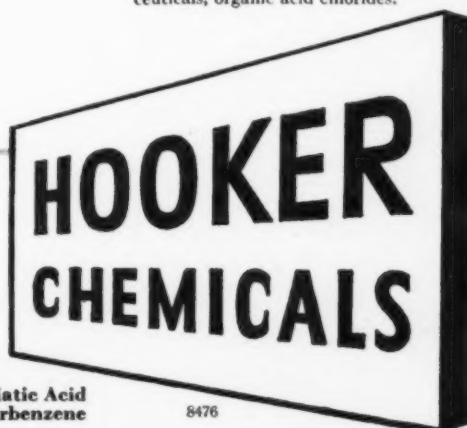
Ferric Chloride

Muriatic Acid
Paradichlorbenzene

8476

May, 1946

Say you saw it in SOAP!



67

The Publishers of
SOAP & Sanitary Chemicals
announce a

new magazine

*Now Serving
the field of . . .*

AGRICULTURAL
INSECTICIDES

FUNGICIDES

STOCK DIPS
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AGRICULTURAL CHEMICALS

A MONTHLY MAGAZINE FOR MANUFACTURERS, PROCESSORS AND DISTRIBUTORS



(Magazine is similar in format to "Soap,"
standard size 9" x 12", type page 7" x 10".)

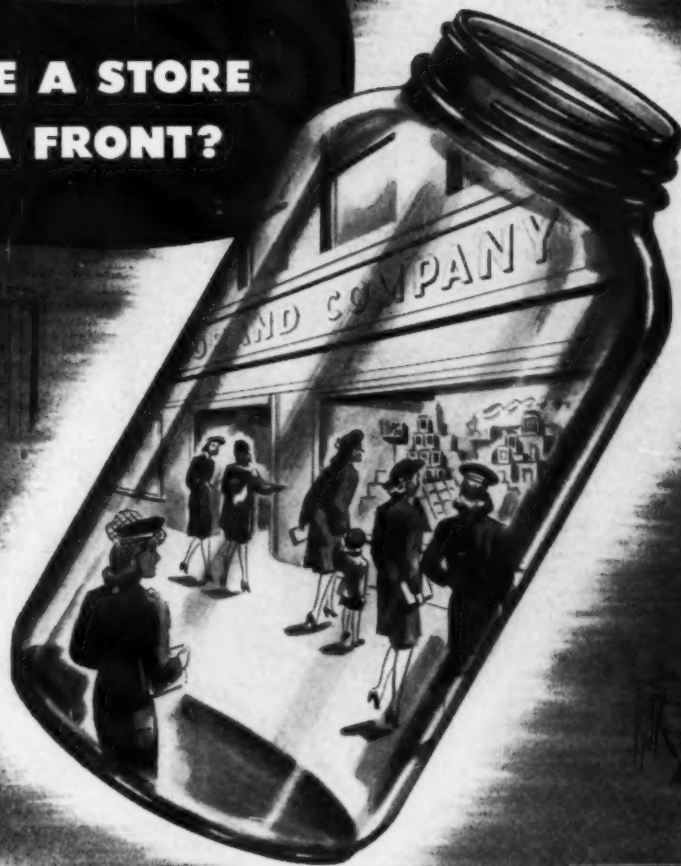
Agricultural Chemicals has a circulation of approximately 4,000 at present. It is read chiefly by the compounding and distributing elements of the industry, farm co-op management, county agents, state experimental stations, state and federal law enforcement officials.

Editorially, it correlates and summarizes in laymen's language scientific data, aiming to be a published forum in the over all field of agricultural chemicals.

First Issue of **AGRICULTURAL
CHEMICALS**

Is Now Available

**EVER SEE A STORE
WITHOUT A FRONT?**



The Anchorglass Container

IS A MINIATURE SHOW WINDOW

Thrifty housewives have learned to "window shop" not only store fronts, window displays and show cases, but packaged goods of all kinds. It is natural and easy for them to make decisions in favor of products they can see and evaluate at a glance! That's why stores have windows. That's why housewives prefer drugs and household chemicals packed in glass containers.

Too, the modern, sanitary Anchorglass Container is impervious to moisture and inert to the action of most drugs and chemicals. It won't rust or corrode and is easy and safe to open and can be resealed over and over again to protect unused portions.



PRODUCTS OF
**ANCHOR HOCKING GLASS
CORPORATION**
LANCASTER, OHIO



NO LEAKS On This CRUTCHER

Because There Are No Staybolts

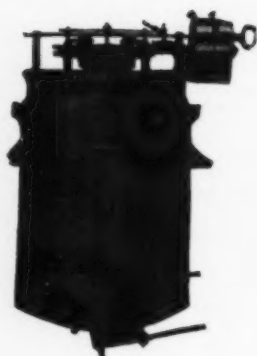
This Perfection Jacketed Crutcher is built from heavy welded steel plates that make staybolts unnecessary.

The inside surfaces are smooth and the entire machine is more durable and extremely easy to clean.

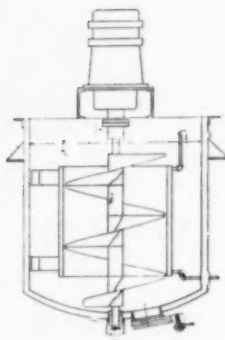
The shaft is carried by a brass bushing and steel-hardened disc, taking all the weight off the gears.

Particularly efficient for making laundry, floating, cold-process, half-boiled, automobile, liquid, and similar soaps.

Made of plain steel, nickel-clad steel or other non-corrosive materials.



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PERFECTION
JACKETED
CRUTCHER**



*Either vertical
or horizontal
drive furnished*

HOUCHIN SOAP MACHINES

Are Standard Equipment With Leading Soap Manufacturers

Included in the Houchin Line Are

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HAWTHORNE, N. J.

Lined Drums for Shipping Soaps

By Dr. L. H. Ott*

Rheem Products Co.

AT the early part of the present century a noticeable conversion from the use of the wooden barrel to steel drums began to take place. Today the steel drum is the most popular bulk package, particularly for liquids and pastes. The present consumption of drums¹ is about 40,000,000 per year, of which about 25,000,000 are of the 55 gallon size. Shipments of soaps and detergents consume about 100,000 55-gallon drums each year, about 50,000 smaller drums, and about 1,300,000 pails.² For liquids, which would include liquid soaps, the 55-gallon, 18 gauge drum with tight head, that is, a non-removable head, and two small openings is the most popular type. This is usually used as a single-trip, or non-returnable container.

There are four basic materials from which bulk shipping containers are fabricated; metal, wood, fibre, and glass. Taking everything into consideration, metal shipping containers are recognized as being superior for all-around service. It is to be admitted that there are some products which metal will not hold satisfactorily until further progress is made with protective lining materials. Due to corrosion and contamination, and government regulations, certain products must be packaged in glass or wood. Invariably

however, where metal can be used, either with or without protective coatings, it is adopted. Among the reasons for this is superiority in the following qualities:

Strength
Water and moisture proofness
Vermin and rodent proofness
Fireproofness
Resistance to product absorption
Resistance to hot filling
Greater retention of cleanliness
Ease of reconditioning and resale value
Ability to withstand rough handling
Ease of handling
Ease of closure and closure security
Product security

Metal drums are generally classified in four groups as follows:

1. Solid Metal
 - a. Black steel.
 - b. Non ferrous metals as aluminum, nickel, magnesium,
 - c. High and low grade ferrous alloys as chrome, nickel, copper bearing, and stainless steels.
2. Black steel base metal used with:
 - a. Clad metals as Ingaclad, Lukens Clad, Jessopclad.
 - b. Light gauge non ferrous and stainless steel sheets, lead, rubber, etc., affixed in several ways to the container interior.
3. Protective coated black steel sheets:
 - a. Synthetic resin coatings such as phenolics, vinyls, alkyls.
 - b. Metallized finishes.
 - c. Hot dipped, as tinned and galvanized.

- d. Electrolytic plated, as tinned, aluminized, Corronized.
4. Mill finished sheets as:
 - a. Galvanized.
 - b. Terne coated.

During the past two decades considerable progress has been made in the fabrication of drums. In the modern drum plant practically all operations are performed mechanically. As production has increased, costs have decreased.

A drum is fabricated from three or more parts. The main parts are the body and the two ends. In production the cylindrical body is rolled from a single sheet of steel, the ends of which are welded together in an automatic flash welding operation. The drum ends are stamped from sheet stock in huge presses, which draw and emboss the metal in a simple operation. The ends of a drum are attached to the body cylinder by double seaming, which consists of tightly interfolding five thicknesses of steel mechanically. Included in this double seam is a sealing compound composed of rubber or glue to seal it against penetration of liquid through the folded seam. These end seams, also called the chime of the drum, can be strengthened by metal reinforcements of 11 or 12 gauge steel weighing about 10 lbs. per pair. This increases the weight of a 55 gallon 16 gauge drum from about 63 lbs. to a little more than 73 lbs.

The rolling hoops on a drum are formed by extending part of the side wall of the shell. These hoops are about

* Address before Potash Soap Division, Association of American Soap & Glycerine Producers, New York, Jan. 10, 1946.

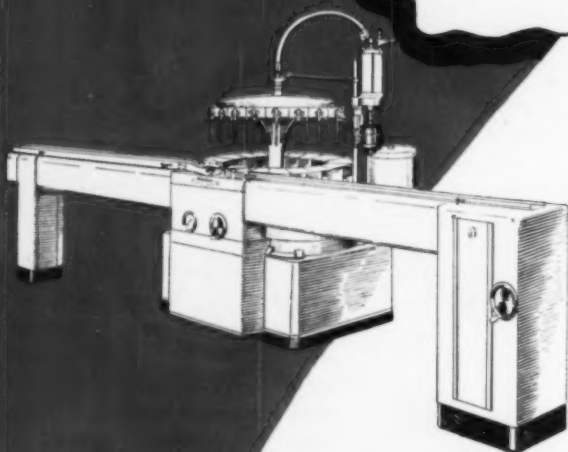
¹ Drums are cylindrical steel containers with a capacity of at least 12 gallons or 100 lbs. regardless of gauge.

² Dept. Commerce report on Containers December, 1944.

Found

"Missing hours"

By
**KIEFER AUTOMATIC ROTARY
VACUUM FILLING MACHINE**



● With the neat filling of all liquids whether light, heavy, foamy or syrupy, **QUICKER** and **MORE EFFICIENTLY**, this machine pays for itself through savings, in a reasonable time. The Automatic Rotary makes the most of every hour, always turning in maximum production every minute of every hour.

**Ask us to show you how you can recapture
"missing hours" in your plant**

Completely automatic, semi-automatic,
hand-fed equipment to clean, fill, close,
convey jars, bottles, tins, collapsible tubes.

Also

Filters and Pumps

The Karl Kiefer Machine Co.

CINCINNATI U. S. A.

New York — Boston — Chicago — Baltimore — San Francisco — Seattle — Los Angeles — London, England



$\frac{3}{4}$ inch high. Corrugations are sometimes put into the side wall to increase the stiffness of the shell. Standard openings are $\frac{3}{4}$ inch and 2 inches. The threaded flanges for the openings are commonly inserted by mechanical crimping in presses. There is a rubber gasket in each flange between it and the drum metal to prevent leakage at this joint. Plugs are made of cast iron, plated steel, alloy steel, and zinc or aluminum die castings. In returnable or heavy gauge drums the flanges are frequently welded in place to prevent failure of the container at this point. Heavy drums in the ICC class are usually equipped with I-bar rolling hoops externally applied to the drum in one of several manners prescribed by regulations.

In addition to the tight head drum just described there are semi and full-open-head drums with various types of closures including lug, bolted, friction, bolt-ring, and lever lock ring. The container industry has developed types and sizes of drums to meet practically all general requirements. At the present time it is engaged in standardization of overall dimensions for a given capacity container, which when accomplished will permit better car-loading by the user and also allow interchangeability of certain parts, especially in the open head drum classification.

IT is unfortunate that steel is a chemically reactive metal and must be protected from contact with some acid, alkaline, and oxidizing substances, so that for years it was necessary to package certain commodities in glass or wood containers. However, the usefulness of steel containers has been greatly increased by the employment of resinous linings. Due to intensive research in the field of plastics and resins during the past 30 years, tremendous advances have been made in the development of synthetic coatings for application over steel. This has opened a vast new field in packaging, with tremendous possibilities. The rapid growth of the steel container industry is due in part to its ability to supply lined containers.

One of the first to adopt the use of synthetic resin protective coated

steel shipping containers in a major way was the shortening industry. As resins were improved, other industries adopted lined drums for various products. Prior to the war about 28 per cent of the drum consumers used lined containers, and then in most cases only to a very limited extent of their total requirements. This was due principally to the need for improved coatings, combined with a better technical knowledge of usage and application. Also in general, little effort was expended by the container industry to educate the consumer to the advantages of protective lined steel containers. This was practically a new industry and some manufacturers hesitated to grow with it. Today both the container manufacturer and consumer recognize the possibilities. The war has taught us much in this respect. Such products as turpentine, syrups, colas, and other products too numerous to mention, and not formerly packed in lined steel, were successfully carried in such units to the armed forces.

A recent survey of 250 container users seems to indicate that their future requirements for lined packages will be considerably increased. More than 80 per cent of those investigated will require from 15 per cent to in excess of 90 per cent of their total requirements in lined containers. This applies to the chemical, petroleum, solvent, lacquer, food, cola, vegetable and mineral oil, syrup, and other manufacturing and processing industries. This increase over prewar use may be ascribed to a number of reasons. Among these is the desire to eliminate investment packages which are frequently fabricated from high cost metals or with expensive metal coatings; also the development of new products requiring the protection of resin coatings, and the adoption of lined drums to eliminate any possibility of even the slightest discoloration or contamination of standard products.

There is also the all important matter of cost to the consumer. A single-trip container, lined with even the more expensive synthetic coatings, is invariably lower in cost than a special metal or high grade hot-dip metal package.

Generally speaking, linings for steel containers are designed to protect the contents of a container from contamination or discoloration by the steel, rather than to protect the container from the action of the material packaged. The linings are referred to by the terms resinous, plastic, enamel, lacquer, and varnish coatings. They are all organic film forming materials. They include waxes, paraffins, bitumens, rubber and rubber derivatives, also synthetic lacquers incorporating phenol-formaldehyde, vinyl, alkyd, melamine, styrene, vinylidene resins, etc. These lining materials are applied over carefully cleaned, or otherwise prepared, steel. The lacquer materials are usually baked after application at temperatures varying from 250°F. to 450°F.

In regard to lined drums for the soap industry, we have successfully packaged a considerable number of soap products. Most of our experience has been with phenolic and vinyl coatings. Since most soaps are only mildly corrosive as a result of being neutral or slightly alkaline, it has been possible to obtain a satisfactory job with a single coat lining. In the case of liquid soaps, the story has not been as satisfactory due to the presence of certain surface active materials. These agents are so active that any deficiencies in the coating are points of attack which have sometimes caused the coating to become separated from the base metal. The best way to overcome this condition is by using multiple coat systems over carefully cleaned steel to eliminate pinholes in the undercoating, should any exist.

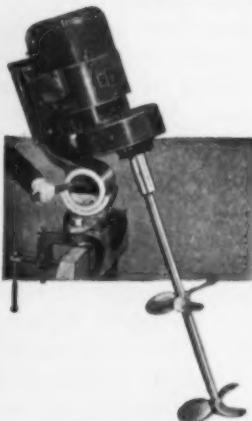
We feel that there is a definite place for lined containers in the soap industry. We believe that linings will help to eliminate corrosion and consequent discoloration of your products. Your drums will have better storage characteristics, and give more satisfaction. It is very difficult to make blanket recommendations for linings, however. Each new product should be carefully tested in sample containers made under commercial conditions. The drum industry is anxious to work with soap makers in the development

(Turn to Page 145)

ALSOP ~~Hy-Speed~~ MIXERS and FILTERS

for every liquid processing job

"Hy-Speed" PORTABLE MIXERS



Are designed for rim mounting to Open Tanks. Makes every Tank a Mixing Tank.

UNIVERSALLY ADJUSTABLE

The universally adjustable clamp used on all portable mixers permits positioning of the shaft with its propellers on any angle from the tank side wall and at any point right or left of tank center, thereby permitting the selection of the most suitable mixing action for the job at hand.

PROPELLER COMBINATIONS

Many types and combinations of propellers are available for specific purposes. Some of these types are: Push, push-pull, studded, cut-out, perforated, saw tooth, folding and others of the whisk and cage beater type.

PERMANENTLY MOUNTED

Many processes involving agitation require the use of side-entering or vertical propeller units. Proper engineering is essential in such installations if exact results are to be obtained.

Our exclusive experience of over a quarter century in the design and application of "Hy-Speed" Mixers of all types permits us to accurately predetermine satisfactory results. Many special types are also available for any unusual problems.

Our engineering facilities and experience are at your service, write us today.



ALSOP

ENGINEERING CORPORATION

Filters - Filter Discs & Sheets - Mixers - Agitators

105 GREEN STREET

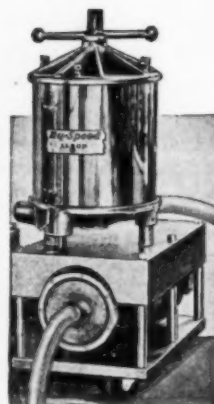
MILDALE, CONNECTICUT

"Sealed-Disc" FILTERS

PORTABILITY

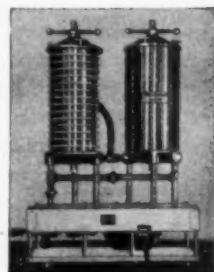
Alsop "Sealed-Disc" Filters are completely enclosed, airtight, eliminating loss through leakage or even by evaporation. They are mounted on stands with pump and motor and can be equipped with wheels when portability is desired. Where corrosive liquids are to be handled and where splashing is likely to be encountered, the special splash-proof assembly shown is available.

Metals used in the Alsop Filters depend upon the solutions to be handled; they are made of Stainless Steel, Monel Metal, Nickel, Brass and Bronze or Iron and Steel.



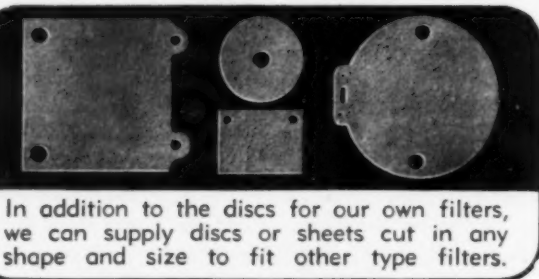
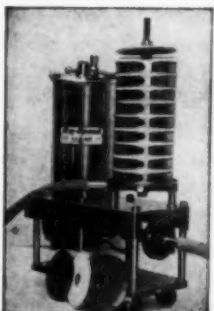
MULTIPLE UNITS

Where large capacity filtration is needed, multiple unit filters are recommended because they give the greatest possible filtration area and capacity within the smallest and most convenient space limits.



SIMPLICITY

The principal of design used in "Sealed-Disc" Filters accounts for the enormous filtration area in such small and compact units and is equally responsible for their relatively enormous capacity. They provide maximum possible flow rate, with positive clarity and with a minimum of supervision and operating labor. Sizes, with or without pumps, range from 1 g.p.m. to thousands of gallons per hour.



In addition to the discs for our own filters, we can supply discs or sheets cut in any shape and size to fit other type filters.

PRODUCTION

Clinic

By DR. E. G. THOMSEN, PH.D.

THE writer was recently privileged to discuss the subject of company publications or house organs with the head of a concern which has for over twenty years published one of the most attractive and best edited magazines of this type. The objective of this particular periodical is to promote better packaging, to publicize beautiful packages of customers using the company's products, to present technical information regarding various products packed and last but not least, to increase sales. In addition, other benefits are derived. These are pride of the employees of the company in their products and a more genial customer-seller relationship. It is interesting to know that in this particular house organ, institutional advertising and company, employee gossip which so often fill the pages of house organs, are entirely suppressed. They have adopted the plan of propagandizing their products by showing their use on customers packages. Each month they pull a page from their own publication, however, to reinsert in regular trade papers to augment their advertising.

My friend informed us that, due to this method of advertising, their business has received much impetus. When they curtailed such publicity, due to paper shortages, they were deluged with requests for regularly published issues. This indicated that the organ had become an important addition to many customers' reading, for the requests came from all departments of various businesses but mostly from men in the production department.



This private publication is but one of the many that are available for the mere asking. Most of the papers are not as elaborate or artistic as the one referred to. They should not be judged, however, by their size but by what the reading matter consists of. Not all companies can afford to publish too elaborate a paper. Every month we have the opportunity of reading quite a few of these house organs. There is a tendency in some cases to read those that have an attractive make-up and pass by the ones that do not carry illustrations. It is about the same as being attracted to the flashily dressed dame, rather than to the plain Jane who usually has more brains than good looks. We have in mind a mimeographed series of sheets we peruse once a month that contain much more information than another that comes to us and ballyhoos a lot of insignificant matters and subjects. A bit more of the meaty things with fewer jokes and less gossip would cer-

tainly add to the value of this attractively made-up house organ.

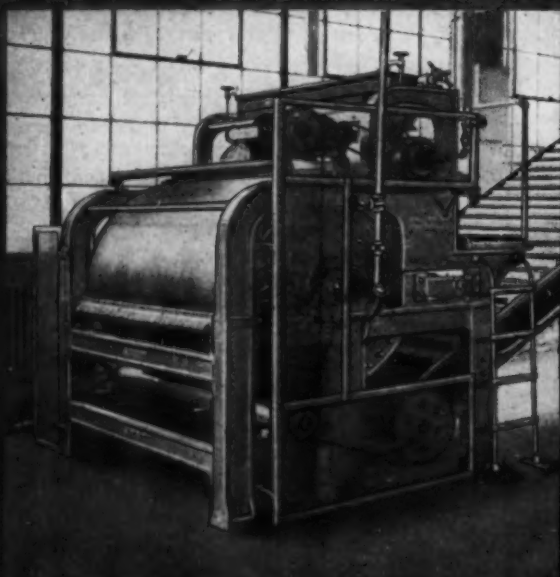
It is often the case, in larger organizations, that house organs do not find their way to the production man's desk. For some unknown reason they go to sales and advertising departments and get buried in their files, whereas they contain information of great value to the men who produce and control qualities of the goods. A considerable part of the blame for this lies with these men themselves. Publishers of house papers aim to get their issues into the proper hands. If this is not done they do not know it unless the interested persons inform them. They are usually very generous with their publications and are happy to put interested persons on their circulation list. All that is usually necessary, is to write them on a company letterhead, give the employee's title and ask to be included. One courtesy most of us who obtain this free service often fail to render is to write a letter of appreciation to the editor. Such a favor is very acceptable and so rare it oftentimes finds space in the publication. It is rather difficult for many of these editors to know if they are actually presenting what their readers want.

If you are not reading house organs pertaining to your particular line of business you are losing a big bet. Much valuable information of a technical and of a general nature may be gleaned each month by proper reading of the important contributions these make to the literature. Much of it is important to produce better products more efficiently.

Liquid Floor Waxes

In a recent rather long jaunt through the middle west we had occasion to examine numerous samples of liquid floor waxes and the so-called synthetic or artificial waxes used to compound them. The shortage of carnauba wax has certainly brought upon the market an amazing array of substitutes. It is unfortunate that in a time of emergency, smaller wax makers particularly, are misled by untried and misrepresented products. Unfortunately carnauba

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wax or other waxes, or what have you, are not covered by statute or regulation that requires any statement as to content, purity or efficacy. The Federal Specification P-W-151a which is so often used as a criterion for the quality of a water emulsion floor wax is subject to rather wide interpretations. It seems to be used at present, more as a specification for sophistication, rather than to cover a satisfactory product. One sample we examined claimed to contain 12 per cent non-volatile matter. We found 10 per cent. The so-termed wax content of the total solids ran 65 per cent by weight as the above spec. requires and the softening point certainly was "not less than 77° C." We could not soften it at even about 100° C. It set to a hard, dense mass as we raised the temperature above 80° C. If there was any wax, and especially carnauba, in this residue, we could not find any. Yet this emulsion wax was represented as passing P-W-151a.

In another case we tried to apply a wax to a piece of battleship linoleum whose surface was properly treated to take liquid wax. It went on about like water wets a slick, oiled surface. Here and there some of it stuck but the effect upon drying was like the small shadows when the sun shines through a fully leafed tree. It produced a good mottled effect. Yet again this was wax represented as being a "superior liquid emulsion wax." When fresh we were told it seemed to work alright.

In another sample the mass had thickened or jellied so it was reminiscent of cheese curds. Even shaking it would not break up the congealed portions properly. We have never seen properly made waxes made from carnauba wax react like this, especially if about 8 per cent of this wax is present. Another sample of liquid wax made six months previously from an artificial, carnauba-type wax was shown to us. This company was on the spot as they had made up a considerable quantity of this wax and had it widely distributed. When first made, the wax was a good substitute for a carnauba type wax. As it aged

an unpleasant odor developed and after about six months the product stunk to high heaven. Some sulfurous compound entered into the scent. No traces of sulfur were found in any of the known ingredients which were also used in another wax without imparting a bad scent. The odor arose from some decomposition product in an artificial wax used in the product.

Liquid waxes were also found which indicated the presence of low melting point waxes and mineral waxes of high melting points. We probably have not covered all the present day sophistications practiced to produce a satisfactory liquid emulsion wax without the use of carnauba wax. We do not criticize the objective. As a matter of fact it would be a boon to the liquid wax business if a good wax could be made without carnauba wax. What we do criticize is the unwarranted haste with which untried products are coming to the market, as well as the misrepresentation that is current. Such procedures are most detrimental to any type of business. The usual remedy is legislation to counteract the exploitation of the uninitiated and the public. It seems to us that since carnauba wax is very apt to be scarce for a long time and there is a market for a substitute floor application, some more comprehensive specification than P-W-151a to cover these newer type products should be established for the good of the industry.

Emulsifying and Dispersing Agents

The Biofen Laboratories, Bridgeport 7, Conn., inform us they have available a new series of compounds as emulsifying and dispersing agents. These consist of high molecular weight esters ranging from viscous liquids to hard waxy solids. Certain of these are miscible with pine oil, kerosene, linseed oil, toluol, etc. By the addition of water to these mixtures, permanent stable emulsions result. DDT solvent solutions, carnauba and other waxes may be emulsified by special emulsifiers of this type. The substances also possess value because of their acid stability as dispersing and thickening agents in the presence of acids, bases and salts. Further information in re-

gard to these may be had by consulting the above company.

Pulverizer for Ultra-Fine Powders

The No. 5 Mikro-Pulverizer is announced by the Pulverizing Machinery Company, Summit, N. J. This small mill, by the use of 5 pH motor to drive it, will grind from 5 to 200 pounds per hour of certain materials, reducing them to particle sizes from 1 to 25 microns. The mill operates by a new grinding principle that assures performance as to particle size, capacity and required horse power. The Mikro-Pulverizer is so constructed that the materials being ground are in contact with stainless steel or a high nickel-iron alloy to prevent contamination. Further details are available.

Rust-Proof Dust Pan

Steel Industries, Inc., Chicago, are now manufacturing a line of cadmium-plated dust pans for heavy duty institutional use. The cadmium-plating prevents deterioration due to rust when the paint chips away. Distribution plans call for sale through janitor supply houses.

New Telescoping Filler

A new package filler that employs telescoping action to avoid waste and dust in the packing of free and non-free flowing products such as cleansers, bowl cleansers, flake lye, drain pipe openers, chemical cleaners, soot removers, etc., was introduced recently by J. L. Ferguson Co., Joliet, Ill. Cylindrical containers, paper and metal cans or rectangular cartons are raised onto the filling tubes of the new "Packomatic Telescoping Volumetric Filler," and then lowered in continuous operation. This internal, close-contact action prevents dust and loss of material, according to the manufacturer. The new filler handles up to 100 packages per minute, and can be built on order for higher speeds.

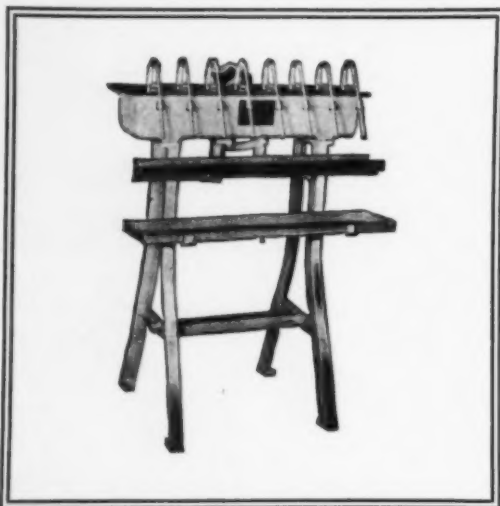
First Italian Pumice Arrives

James H. Rhodes & Co., Long Island City, N. Y., announced recently that it had received its first shipment of Italian pumice since before the war.

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Evaluation of Washing Agents

For the evaluation of synthetic washing agents, protective colloid action and emulsifying, wetting, dispersing, and in some cases lubricating properties must be considered. Detergents differ so much among themselves that no one test will give a valid comparison of their respective values under all conditions. Laboratory tests should be empirical and should be based on practical conditions. R. B. Whitehead. *Ciba Rev.* 1945, No. 49, 1789-90; through *Chem. Abs.*

Oil Extraction Plant

Tests of an Allis-Chalmers semi-works solvent extraction unit similar in design to their 200-ton unit, have indicated that this can be used successfully in the oil-milling industry with a saving in electric power requirements and operating personnel. The semi-plant unit was first used successfully in the soybean industry.

The extractor or contact chamber is composed of many superimposed glass rings divided by steel partitions. The cottonseed meats are fed into the top and pass through by gravity while the solvent is introduced at the base of the extractor and withdrawn at the top. The oil-solvent mixture discharges into a receiving tank with agitator and is then filtered, pumped through a flash chamber and to a stripping column to remove the last traces of solvent from the oil. The meal passes through a drier to recover the solvent. J. I. Gordon. *Southern Power and Industry* 64, No. 1, 55 (1946).

Pressure Hydrolysis of Fats

By use of a specially designed pressure vessel with a carbon steel shell and an inner surface clad with a thin layer of Inconel, an alloy resistant to corrosion from fatty acids, fats and oils can be hydrolyzed. About one-third of the inner vessel contains water, about half contains fatty material, and the space surrounding the inner vessel is filled with saturated steam under 640 pounds pressure, the liquid oil and water being at 250° C. The glycerol is retained in the aqueous layer and the fatty acids pass into the

fat layer composed mainly of fatty acids but containing some hydrolyzed material. Outlet pipes are used to maintain proper operating pressure by release of aqueous glycerol solution and fatty material, respectively. W. Davey, to Colgate-Palmolive-Peet Co. U. S. Patent No. 2,389,246.

Evaluating Metal Cleaners

A quantitative method for performance evaluation of alkaline metal cleaners is described. Reproducibility is rather good. The method involves coating metal panels with various oils by a specific dipping and drainage technique, followed by a carefully controlled cleaning and rinsing procedure. The panels are covered with a fine spray of water, which condenses as droplets on the oil-covered areas, providing a pattern that remains constant for a sufficient time for a sketch to be drawn on paper divided into 100 squares. The average value for cleaned area of 5 panels is the cleaning efficiency index. Conditions influencing the results, and variations in the procedure are discussed. S. Spring, H. I. Forman, and L. F. Peale. *Ind. Eng. Chem., Anal. Ed.* 18, 201-5 (1946).

Component Acids in Fats

The mixed fatty acids in liquid fats are separated into several groups by crystallization from appropriate solvents at low temperatures. In each group the proportions of the component acids are determined spectrographically after isomerization with alkali. Palmitic acid and other saturated acids may be determined by fractional distillation of the completely hydrogenated methyl esters of the total mixed fatty acids, or from direct ester-fractionation of the methyl esters of each group of the mixed acids. F. D. Gunstone and T. P. Hilditch. *J. Soc. Chem. Ind.* 65, 8-13 (1946).

Fatty Acid Fractionation

Mixtures of fatty acids and of fatty acids and their esters of simple alcohols are separated by passing a solution of the substances through a thick layer of an inert surface-active material. H. P. Kaufmann. German Patent No. 741,359.

Alteration of Soap Phases

Emulsion studies were made and the alteration of soap phases studied by adding increasing amounts of water to a homogeneous oily solution of 100 cc. of triethanolamine oleate in 19 cc. of paraffin oil. With 15 cc. of water the solution became rigid. Toward 50 cc. the emulsion could not be resolved microscopically but had a honeycomb appearance suggesting heterogeneity. This was confirmed as more water was added, and with 100 cc. the water particles were clearly visible. With 200 cc. it was creamy, but was still of the type water-in-oil. Softening definitely occurred with 220 cc. and with 240 cc. inversion distinctly took place.

In order to prove that the critical point of inversion is independent of the amount of oil, the same experiment was repeated with 100 cc. of the oleate in 119 cc. of oil. The inversion again occurred with 240 cc. of water. By operating with the same amount of soap it was possible to add as much as 2500 cc. of oil without destroying the oil-in-water phase. The type of emulsion was determined by adding to each preparation a few grains of Sudan red, soluble in oil, and examining microscopically. The best means of preparing emulsions was found to be an egg beater. For concentrations of soap below 28.5 per cent the soap is soluble in water, although for very great concentrations it is the water that is dissolved in the soap. F. Lachamp. *Compt. rend.* 220, No. 10, 317-18; through *Chem. Abs.*

Soap in Cetane and Water

Transition temperatures have been determined for mixtures of sodium stearate, cetane, and water, and the properties of such systems have been described. The systems exhibit a great variety of colloidal phenomena, existing as clear solutions of "solubilized" oil, as oil-in-water emulsions, as soft liquid crystal phases, and as gels which vary from transparent jellies to hard wax-like solids. They are of industrial importance in such products as cosmetic preparations, lubricating greases etc. R. D. Vold and J. M. Philipson. *J. Phys. Chem.* 50, 39-43 (1946).

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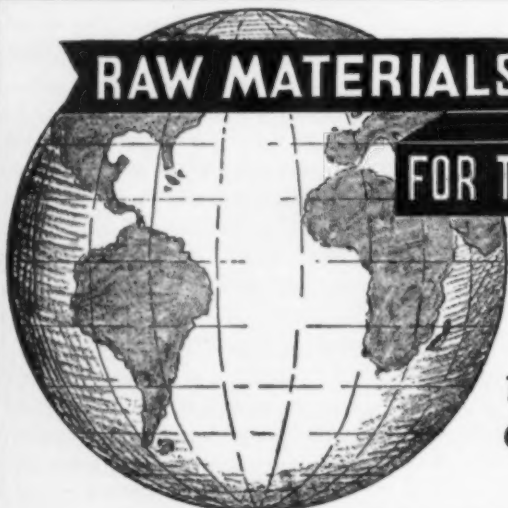
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Metasilicate
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Stearic Acid
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PRODUCTS AND PROCESSES

Granular Soap

By incorporation of soap products made from an oil of the coconut-oil type, the tendency of granular soap products to "ball" is circumvented. Mix 90 parts of a ground flake product prepared from a 39-titer tallow-grease with 10 parts of finely divided coconut-oil soap, to produce a mixture which does not ball in water at 120° F. D. R. Byerly, to Procter & Gamble Co., Inc. U. S. Patent No. 2,388,632.

Cleaners in the Dairy

Single or multiple alkaline cleaners find use in the milk industry, including caustic soda, soda ash, sodium metasilicate, and trisodium phosphate. Abrasives are sometimes added. Metasilicate is preferable to orthosilicate which is more alkaline, and trisodium phosphate is preferable to disodium phosphate, which is less alkaline. Removal of adherent proteins and fatty matter depends on the alkalinity or the proper pH of the cleaning solution. G. Ray, *Chemie & Industrie* 55, 27 (1946).

Soap for Molds

Soap is a component of a lubricating mixture for molds used in molding rubber. For this purpose the following aqueous emulsion is recommended in U. S. Patent 2,388,163.

	Per cent
Gum arabic or agar-agar	0.1-0.4
Soap	0.1-0.3
Pine oil	0.3-0.9
Turkey red oil	1.2-2.1
Trisodium phosphate or sodium pyrophosphate	0.34-0.4
Water, to	100

Bull. Assoc. Am. Soap & Glycerine Producers, March, 1946.

Recovery from Fish Waste

Fish waste is digested under steam pressure after adding caustic soda corresponding to about 10 per cent of the estimated protein content. The solution is cooled to 50° and the protein precipitated by electrolysis, or by addition of acid in slight excess.

Oil may be removed from the surface after the digestion but before cooling. H. Torgersen. Norwegian Patent No. 66,302.

Denture Cleaner

A cleaner for dental plates is composed of the following:

Sodium perborate	240 grains
Sodium chloride	480 grains
Exsiccated magnesium sulfate	30 grains
Calcium chloride	30 grains
Anhydrous sodium carbonate	30 grains
Methyl salicylate	1 minim
Menthol	2 grains
Oil of peppermint	12 minims

Add a little kaolin or magnesia to the powder to prevent it from caking. To use, a small portion is dissolved in water and the dental plate allowed to remain in the solution overnight. *Drug & Cosmetic Ind.* 58, No. 1, 143 (1946).

Sulfonated Amine Compounds

Aminosulfonic acids are treated with aralkylating agents containing at least 8 carbon atoms to form *N*-aralkyl aminosulfonic acids which are useful as dispersing, washing and foaming agents. C. Granacher, P. Streuli, and J. Meyer. U. S. Patent No. 2,376,911.

Carpet Cleaner

A new detergent for location-cleaning of carpeting in homes, hotels, clubs, theaters, stores etc. where floor covering removal is inconvenient, has been announced by the Mathieson Alkali Works, New York. The product will be marketed under the trade name, "Neutrotone."

The cleanser is a powder in which oxidizing agents like hypochlorites are combined with organic detergents. It has high lathering properties but contains no soap. It is used in aqueous solution and applied with a rotary brush. Released dirt and soiled detergent solution are removed with a wet vacuum. The product not only removes ordinary dirt but also deodorizes and demoths carpeting with-

out leaving a residue or harming the texture, color, or tensile strength.

Evaluation of Laundry Sours

The purpose of the sour, applied after the last rinse, is to neutralize the alkali left in the load. The amount which should be used varies with the type of sour; enough should be present to give a pH of 4.5-5.5, which brings the load to a very mildly acid reaction.

Fluoride-type sours are generally considered most desirable, and certain of these possess some stain removing properties. Apart from that, the criterion of suitability may be based on cost per pound, although tensile strength loss may vary somewhat with the different sours. Relative souring power is shown in the table, based on 56 per cent acetic acid as 1.

Relative Souring Power is given per pound of Agent

	Souring Power
Acetic acid, 56%.....	1
Acetic acid, 99.5%.....	1.77
Oxalic acid	1.70
Sodium acid fluoride.....	1.72
Ammonium acid fluoride..	1.88
Sodium silicofluoride	2.28
Ammonium silicofluoride .	2.41
Alkasour	2.17

Oxalic acid is generally considered unsafe for use as a sour,—also mineral acids, as too great loss of tensile strength may result. The amount of sour has to be based on conditions in any particular plant. F. W. Lyndon. *Laundry & Dry Cleaning J. of Canada*, March, 1946.

Aluminum Cleaners

Although aluminum cleaners are common, good ones are very rare. They must be mild acids or alkalies if they are to be acid or alkaline at all. At least one recent pair of patents makes use of very mild materials—namely, sodium metaphosphate, metaphosphoric acid, or ammonium dihydrogen orthophosphate, with a minor proportion of alkali fluoride. A 5 per cent solution is suggested. A wetting agent may be added, and sometimes tartaric acid or sulphamic acid is used. Many aluminum cleaners in the past have contained silicates, a departure from normal practice. *Manufacturing Chemist* 17, 75-6 (1946).



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U.S.I. CHEMICAL NEWS

May ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1946

Toughness, Durability Are Features of New Phthalic-Alkyd Resin

Aroplaz 1076 is Recommended For a Variety of Outdoor Finishes

Recently developed by U.S.I., Aroplaz 1076 offers many new possibilities to coatings manufacturers. A pure long oil phthalic-alkyd, it provides toughness and durability, and may be used in all types of exterior finishes.

Similar to Navy 52-R-13 Resin

Except for interior color retentive finishes, Aroplaz 1076 is very similar in physical characteristics and performance to Aroplaz 1240 (Navy 52-R-13 Resin). During the war, this resin helped to protect America's "bridge of



When coatings have to "take it", Aroplaz 1076 provides toughness and durability. Coatings based on this versatile resin are used widely in outdoor applications.

ships" against salt spray, scorching sun, stinging rain, and quick temperature changes. In addition to its resistance to severe service condition, the Navy finish coat based on Aroplaz 1240 possessed good brushability and drying characteristics. Today, Aroplaz 1076 will provide the same superior qualities in a host of tough, durable finishes for many types of civilian work.

Wide Applications

This versatile new U.S.I. resin is recommended for all types of outdoor finishes. It is particularly suitable for trim and trellis, as well as railroad coach and freight car finishes. Aroplaz 1076 may also be used for a wide variety of interior coatings except where extreme color retention is paramount. Samples are available upon request.

The specifications for Aroplaz 1076 are:

Viscosity (GH)	Z-Z ₂
Acid No. (plastic)	8-12
Color GH	7-10
Wt./Gal. at 25°C.	7.85-7.95 lbs.
Phthalic anhydride content	25%
Oil content	64%
Resin content	None

Low-Cost Amino Acid Synthesis Seen Revolutionizing Treatment Of Liver Damage, Burns, Shock

Methionine. Made At Vast Cost Reduction by New U.S.I. Process, Should Play Vital Role in Extending Modern Amino Acid Therapy

With this issue of CHEMICAL NEWS, U.S.I. announces the development of a commercially practical method of synthesizing *dl*-methionine, the amino acid which has been known for some time to have great value in treating and prevent-

ing liver damage but which has been little used because of its high cost. The new process is expected to bring a cost reduction in the range of 40 to 1 and to make methionine widely available both for treatment of liver damage and for the still newer uses which also appear to hold far-reaching possibilities. Among these newer uses are the treatment of shock, burns, exposure, as well as poisoning from a wide range of compounds, particularly halogenated carbon compounds. U.S.I.'s methionine is supplied for manufacturing use only.

It is reported that protein hydrolysates containing amino acids have been used with outstanding success in the treatment of peptic ulcers and starvation cases. One of the principal uses of methionine will be to fortify the protein hydrolysate and increase the methionine content. It is known, for example, that yeast hydrolysates, long used for their nutritional value, are deficient in methionine.

Treatment of Burns, Shock and Exposure

Burns, shock, exposure, fracture and surgical wounds are promptly followed by cell destruction on a major scale, owing to the raiding of protein tissue to provide the required methionine. While high protein ingestion might prevent or overcome this destruction, in many cases the patient's ability to consume or retain food is so impaired that a high-

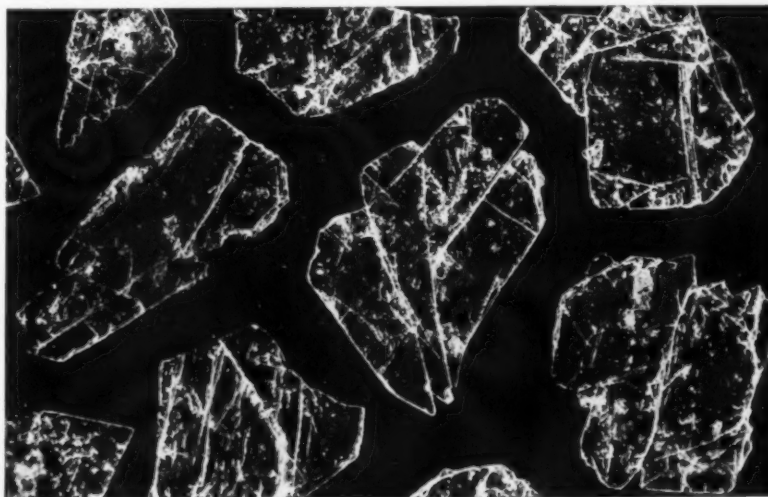
(Continued on next page)

Rotenone Extracted By New British Process

A new process for the extraction of rotenone from derris root is described in a recent British patent. According to the claims made, both the resins and the rotenone are first extracted with acetone. The bulk of the acetone is then removed, and the rotenone and resinous constituents in the residue are separated by dissolving the residue in alcohol. The rotenone is selectively precipitated from the alcohol on standing.

Montan Wax Substitute Made From Lignite, Peat

A suitable substitute for Montan wax—a dark, hard, and odorless ester wax melting at about 80 degrees C.—may now be extracted from Devon lignite and various English and Scottish peats, according to a technical paper published recently. Prior to the war, Montan wax was extracted from the lignites of Saxony and Thuringia. Devon lignite wax is similar to Montan wax in most respects, but peat wax is softer in texture and has a lower melting point by 10-15 degrees C.



The new low-cost methionine helps in many ailments, promises great things in nutrition. These are methionine crystals seen under a microscope.

U.S.I. CHEMICAL NEWS

Low-Cost Methionine

(Continued from preceding page)

protein diet is impossible. In such cases, as well as those where over-feeding is contraindicated—such as stomach operations—it is relatively easy to administer the required methionine by capsule or intravenously.

Methionine as a Detoxicant

It appears that methionine not only has definite therapeutic properties, but prophylactic ones as well. Experimental and clinical results show that it exerts a remarkable protective effect on the livers of persons exposed to poisons known to cause liver injury. Among the poisons which yield to methionine are arsenical and phosphorus compounds, TNT, and halogenated carbons such as chloroform and carbon tetrachloride.

TNT Poisoning

TNT poisoning, often fatal, has been effectively treated with methionine, which halts destruction of liver tissue, and aids in its rebuilding. Methionine has also been used with outstanding success in cases of carbon tetrachloride poisoning which would normally prove fatal. There seems every reason to believe that other important applications may be just around the corner.

Action of Methionine

Amino acids are the building blocks of proteins. That is another way of saying that proteins are broken down into various amino acids before they can be assimilated in the body. Of the ten essential amino acids, methionine is the one which seems to be essential to a healthy liver. In addition to poisons which attack the liver, there are other conditions, such as burns, shock, and exposure that cause the animal system to raid tissue-protein molecules for their methionine, causing cell destruction at a rapid rate.

Methionine is primarily an exogenous substance which must be ingested with food, or introduced into the system in some other manner. Best natural sources of methionine are dairy products, fish and liver. However, to administer therapeutic doses from natural methionine sources would call for an impractically large food intake. For instance, 4 to 6 or even up to 10 quarts of milk would be included in the daily diet in order to secure a curative dosage of methionine. A few grams of the new synthetic product will produce the same effect.

U.S.I. is making every effort to have methionine available in sufficient quantities for manufacturing use to supply clinics and experimental laboratories.

THE MONTH IN TEXTILES

A new washable, waterproof fabric suitable for seat covers is developed . . . A nylon slipper is marketed which can be scrubbed with soap and water . . . A method is reported for making rayon shrinkproof . . . High-speed warp knitting is reported from Germany . . . Electrically heated rugs are prepared . . . A new type of polymerizable dyestuff is reported to be superior to old-type dyestuffs . . . A carbon impregnated "conductor" tape is stated to be useful in shielding and electrostatic flux grading . . . A new process is developed for imparting a permanent water-repellent finish to cloth without affecting the "feel" . . . Fire-resistance is imparted to textiles by a zinc borate and phosphate combination . . . By means of a new treatment, it is claimed that all-wool suits can be made cool in warm weather . . . A new mechanical cotton picker is invented.

Atebrin Holds Promise In Treatment of Cholera

Research recently carried out in India indicates that atebrin, now used widely in the treatment of malaria, may also be of value in combating the equally dread disease, cholera. This drug, which is synthesized with the aid of noval ketone, a product of U.S.I., is claimed to have shown promising results with more than a dozen cholera patients.

In dilutions of 1 to 4000, atebrin was found to be bacteriostatic to 10 strains of the Inaba Sub-type of vibrio cholera and 11 strains of the Ogawa sub-type. Its effect, however, was nil on 9 strains of para-cholera vibrios and 12 strains of saprophytic vibrios. The drug was also found to be non-bacteriostatic to enteric and dysenteric microorganisms.

Vitamin A Synthesis

The synthesis of biologically active Vitamin A substances was achieved by U.S. wartime research, but was kept secret for a long time under government orders to prevent it from falling into enemy hands, it was revealed recently. The procedure for the synthesis of these substances is reported to involve seven or eight chemical steps, and to make use of such chemicals as ethyl chloroacetate, beta-ionone and acetylene.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

A pharmaceutical slide rule, designed for use in pharmaceutical, chemical, and allied industries, is described as affording a rapid method for converting units in the various systems of weights and measures. Some conversions contained on this slide rule are: grams per kilo to grains per pound, ounces to cc.'s and degrees C. to degrees F. (No. 063)

U S I

A new cleaning compound, described as a paste, is said to clean painted surfaces, enamels, tiles, porcelain, stainless steel, nickel, and chrome plate without the use of a solvent. It is claimed to be non-injurious to the hands. (No. 064)

U S I

New mold release agents are said to secure release of plastic or rubber materials fabricated by injection or compression molding or pressure laminating. (No. 065)

U S I

A new marble-like material is stated to be harder than marble and to be ten times more resistant than plaster to penetration by water. The manufacturer claims it can be sawed, sanded, polished, and generally handled like a plastic. (No. 066)

U S I

A new wetting agent of the fatty-amide type is described as a freely flowing amber liquid which congeals at 0 degrees C., has a mild odor, and is miscible with water, vegetable oil, fat, and waxes. (No. 067)

U S I

A new mildewproofing agent, described as a specially treated textile resin, is claimed to be non-toxic and non-irritating to the skin at recommended concentrations. It is reported to be water soluble and easy to apply. (No. 068)

U S I

A new plastic adhesive, marketed as a wine-colored liquid with a separate catalyst in powder form, is claimed to cure at room temperature with only slight pressure. It is recommended by the manufacturer as a strong adhesive for bonding wood, leather, vulcanized fiber, cloth, or paper. (No. 069)

U S I

A new scouring agent for wool is described as a detergent soluble in hot water. It is said to give uniform scouring action without soap. (No. 070)

U S I

A new injection molding plastic has been announced. It is described as light in weight and tough, with a specific gravity of 1.17 to 1.2. It is reported to have an unlimited color range and to mold to a fine finish. (No. 071)

U S I

A replacement for methyl orange as a standard for total alkalinity titrations is said to be extremely sensitive and to produce a clearly defined endpoint. (No. 072)

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Dipentyl Pthalate
Dipentyl Pthalate
Dipentyl Pthalate

OTHER ESTERS

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Ethyl Chloroformate
Ethyl Formate

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Acetoacetic acid anhydride
Acetoacetic acid chloroformate
Acetoacetic acid formate
Alpha-acetylbutyrolactone
Cinnamyl 2-benzoylacetate
Cinnamyl 2-pentylacetate
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Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine & Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,395,971, Detergent Composition, patented March 5, 1946 by Donald John Loder, Wilmington, assignor to E. I. du Pont de Nemours & Co., Wilmington. A detergent composition in cake form consisting of in percentage by weight from 60 to 95 per cent of a reaction product of 1,3-dioxolane with a water-soluble hydrophobic organic oxygenated compound, which prior to the addition of the 1,3-dioxolane group contained a reactive hydrogen atom, and from 40 to 5 per cent of a sudsing agent selected from the group consisting of sulfonated higher fatty alcohols, soaps, Turkey-red oil, saponine, and the aliphatic and aromatic organic sulfonic acids.

No. 2,396,012, Insect Repellent Compositions, patented March 5, 1946 by Howard A. Jones and Bernard V. Travis, Orlando, Fla., dedicated to the free use of the People in the territory of the United States. A method of repelling insects comprising applying to the area from which the insects are to be repelled an insect repellent composition containing 2-ethyl-n-caproic acid as its essential active ingredient.

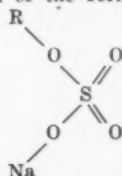
No. 2,396,013, Insect Repellent Compositions, patented March 5, 1946, Howard A. Jones and Bernard V. Travis, Orlando, Fla., dedicated to the free use of the People in the territory of the United States. An insect repellent composition comprising 2-phenylcyclohexanol incorporated in a carrier.

No. 2,396,019, Insecticides, Charles W. Murray, Glenside, Pa.,

assignor to Claude R. Wickard, as Secretary of Agriculture of the United States of America, and his successors in office. An insecticide comprising a carrier of finely divided, fibrous, organic dyed with the salt of an acid azo dye and nicotine.

No. 2,396,054, Insecticides, patented March 5, 1946 by Orville E. McKim, Port Chester, N. Y., assignor to Stanco Incorporated. An insecticidal solution comprising 9.2 per cent to 2.0 per cent pyrethrins I and II and 95 per cent to 80 per cent of isopropyl alcohol and 5 per cent to 20 per cent of kerosene.

No. 2,396,278, Detergent Composition, patented March 12, 1946 by Otto Lind, Dusseldorf, Germany, assignor, by mesne assignments to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio. A detergent composition comprising essentially a sodium salt of a sulphonated alkyl of the formula



where R is a radical of from 10 to 18 carbon atoms and a sodium salt of tetraphosphoric acid.

No. 2,396,398, Polishing Material and Process of Making Same, patented March 12, 1946 by Forrest L. Turbett, Joplin, Mo., assignor to The Eagle-Picher Co., Cincinnati, O. The process of making a material suitable for polishing glass which comprises heating a finely divided, hydrated furnace-charge comprising a substantial proportion of iron pyrites to a temperature between 1500° to 1800° F. for about three hours under oxidizing conditions, cooling the charge, finely grinding it with water, separating the fine particles from the coarse ones in water, flocculating and collecting the fine particles, heating them moderately to drive off free water and then reducing the dried product to extreme fineness.

No. 2,396,468, Germicidal Preparations, patented March 12, 1946 by Elbert C. Ladd, Passaic, N. J., assignor to United States Rubber Co., New York. The method of protecting organic material subject to attack by microorganisms which comprises treating the said material with 2,2,3,4,4-pentachloro-3,4-dihydronaphthalene-1(2).

4,4-pentachloro-3,4-dihydronaphthalene-1(2).

No. 2,396,665, Parasiticial Preparations, patented March 19, 1946 by Elbert C. Ladd, Passaic, N. J., assignor to United States Rubber Co., New York. As a new chemical, 2-chloronaphthoquin-hydrone-1,4.

No. 2,396,670, Process for Modifying Fatty Oils, patented March 19, 1946 by Laszio Auer, South Orange, N. J. The method of modifying a fatty oil to improve its drying characteristics which comprises incorporating in the oil up to 30 per cent of fluorescein and heating the mixture to a temperature between about 220° C. and about 350° C. but not above the boiling point of the oil.

No. 2,396,718, Emulsification of Vegetable and Animal Oils, patented March 19, 1946 by Abraham Moscovitz, Nutley, N. J., assignor to L. Sonneborn Sons, Inc., New York. A composition of matter for blending with oils selected from the group consisting of animal and vegetable oils and blends of such oils with mineral oils to form substantially instantaneously emulsifiable products, which comprises 63 to 74 per cent by weight alkali metal petroleum mahogany sulfate, 9 to 11 per cent by weight alkali metal oleate, 4 to 6 per cent by weight free oleic acid, 12 to 14 per cent by weight of at least one member selected from the group consisting of glycols and glycol monoalkyl ethers, and 1 to 6 per cent by weight of water.

No. 2,397,161, Soap, patented March 26, 1946 by Leopold Sender, Baltimore, Md., and Leo D. Jones, Philadelphia, assignors to The Sharples Corp., Philadelphia. In the manufacture of soap by continuous saponification of fat, graining of the resulting soap and separation of grained soap from aqueous reagent solution by subsidence, the process comprising continuously passing a fat together with an aqueous saponifying reagent progressively through a succession of mixing compartments at a saponifying temperature, maintaining saponifying conditions in the respective compartments adapted to produce a saponified mixture in each compartment of which the proportion of the available fatty acid of the source of fat which has been saponified is outside of the range between 70 per cent and 85 per cent of said available fatty acid, passing the mixture containing soap resulting from saponification of the fat, and aqueous phase, to a zone of centrifugation and there subjecting the resulting mixture to centrifugation and thereby separating aqueous reagent from grained soap.

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Continuous Oil Extraction

A countercurrent extractor is described for studying continuous vegetable oil extraction methods in the laboratory. Essential data can be obtained such as completeness of oil extraction, contact time, solvent-to-solid ratio, miscelle composition, and solvent carry-over. Also described are a rising-film evaporator of the natural circulation type provided with a separator for continuous oil removal, and a new and efficient oil stripper providing turbulence and thin films by operating against gravity and against surface tension. A. C. Beckel, P. A. Belter, and A. K. Smith. *Ind. Eng. Chem., Anal. Ed.* 18, 56-8 (1946).

Autoxidation of Soap

A method was developed for determining the amount of peroxide oxygen present in soap directly, in exactly the same way as used for oils by the Lea method. The procedure is as follows:

Weigh 0.5-1.0 gram of soap into a 40 cc. test tube, depending on the expected peroxide value. To the sample add 1.0 gram of potassium iodide followed by a 2:1 mixture of glacial acetic acid and chloroform. Boil until the soap is dissolved—about 10 seconds—and then for 30 seconds longer, timed with a stop-watch. Cool under running water, dilute with 30 cc. of freshly boiled water, and titrate with 0.002. Normal thiosulfate with starch solution as indicator.

Using this procedure it was proved that the old theory that autoxidation and rancidity occur only where free fatty acids or unsaponified fat are present, is wrong. Autoxidation takes place in the neutral molecule of the soap, in the alkali salt itself of the fatty acid. Experiments showed that unsaturated soaps autoxidize much faster than more saturated ones.

When 0.5 per cent of hydroquinone was admixed with the soap, the inhibitive action of hydroquinone was very considerable. The new method thus gives an exact means for discovering real and new oxidation inhibitors. This soap darkened after addition of the hydroquinone, which indicates that

darkening is not necessarily a sign of rancidity. By the use of this method, solution should be found shortly for many outstanding soap problems, such as the effects of traces of metal, of different inorganic and organic antioxidants, perfumes and soap colors. Few attempts have been made heretofore to study rancidity in soap itself rather than in oil stocks. E. J. Better and A. Davidsohn. *Soap, Perfumery & Cosmetics* 19, 132-4 (1946).

Detergent Analysis

A method has been developed for the quantitative determination of sodium alkyl benzene sulfonates which is applicable to commercial detergents containing alkyl or alkyl aryl sulfonates. Under standardized conditions *para*-toluidine hydrochloride reacts with these organic sulfonates to give amine-sulfonate salts. These can then be determined, direct titration being a suitable procedure. T. U. Marston and J. Schifferli. *Ind. Eng. Chem., Anal. Ed.* 18, 49-50 (1946).

Washing White Linen

White linen is soaked and pre-washed with soda ash or silicates. This is followed by washing with a quantity of soap or fatty acids insufficient for complete washing. The step is carried out at a pH slightly above the neutral point but below pH of the usual soap-wash. The washing continues at the same pH with the aid of any washing agent, preferably one containing sulfonic acid groups. The linen is rinsed in the usual way. J. Amende, to I. G. Farbenind. A.-G. German Patent No. 744,811.

Active Ring Compounds

Capillary-active compounds of high molecular weight are obtained from partly or totally hydrogenated organic hydroxy or amino compounds of at least 12 carbon atoms and containing at least 2 carbon rings. The production of capillary-active compounds involves the substitution of at least one radical containing a solubilizing group on either the hydroxy or amino radical of the parent compound. Henkel & Cie. G. m. b. H. German Patent No. 741,305.

Emulsion Stability

Emulsifying ability for oil-in-water was compared using soap and two synthetic agents. One was a commercial monoglyceride having the following composition:

	Per cent
Monoglyceride of coconut fatty acids	14
Diglyceride of coconut fatty acids	14
Triglyceride	2
Free fatty acids	1
Glycerine	25

The other agent was a commercial synthetic detergent containing 35 per cent of the sodium salt of sulfated coconut oil monoglyceride and 65 per cent of sodium sulfate. Both soap-monoglyceride and synthetic-detergent monoglyceride mixtures gave more stable emulsions than any amount of soap or of synthetic detergent alone. W. G. Alsop and J. H. Percy. *Am. Perfumer* 48, No. 1, 71-7 (1946).

Borax Determination

Borax can be determined in soap and synthetic detergents by first quantitatively precipitating silicates, carbonate, and orthophosphates with strontium chloride. Strontium metaborate is soluble in an excess of strontium chloride solution. After the insoluble strontium salts are removed by filtration, strontium metaborate is converted into boric acid by acidification with hydrochloric acid, and the boric acid titrated in the usual manner in the presence of mannitol. E. W. Blank and A. Tory. *Oil & Soap* 23, 50-55 (1946).

Odor Measurement

While a number of instruments have been used to increase the ability to determine a threshold of minimum perceptibility of odor, none has led to reproducible results with any acceptable degree of accuracy. For the type of odor, hardly a beginning has been made. The work on odor perception has given some preliminary results and has possible practical applications in the fields of medicine and insecticides, as well as in the more obvious field of perfumery. The nose of the experienced perfumer still seems to be the most reliable instrument. *The Givaudanian*, February, 1946.

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(From Page 59)

No. 486,146. Published Nov. 27, 1945. Class 6.

419,514. Shampoo. Filed by Gold Cap Chemical Co., Somerville, Mass., July 27, 1945. Serial No. 486,367. Published Nov. 27, 1946. Class 6.

419,520. Shampoo. Filed by Monroe Distributing Co., Los Angeles, Aug. 1, 1945. Serial No. 486,585. Published Nov. 27, 1945. Class 6.

419,572. Washing compound for woollens. Filed by Woolfoam Corp., New York, Oct. 14, 1942. Serial No. 459,209. Published Dec. 29, 1942. Class 4.

419,594. Cleanser and detergent. Filed by H. D. Lee Co., Kansas City, Mo., Jan. 15, 1945. Serial No. 478,634. Published Dec. 4, 1945. Class 4.

418,598. Detergent preparation. Filed by F. E. Everson, New York, Feb. 14, 1945. Serial No. 479,787. Published Dec. 4, 1945. Class 4.

419,616. Cleaning compound for type-wheels, ink box and other parts of a laundry marking machine. Filed by National Marking Machine Co., Cincinnati, May 24, 1945. Serial No. 483,734. Published Dec. 11, 1945. Class 4.

419,629. Powder for cleaning various types of surfaces. Filed by Twill Laboratories, Wilmington, N. C., June 25, 1945. Serial No. 485,039. Published Nov. 27, 1945. Class 4.

419,639. Synthetic detergents. Filed by Miranol Chemical Co., Irvington, N. J., July 12, 1945. Serial No. 485,733. Published Nov. 27, 1945. Class 4.

419,640. Synthetic detergents. Filed by Miranol Chemical Co., Irvington, N. J., July 12, 1945. Serial No. 485,734. Published Nov. 27, 1945. Class 4.

419,641. Toilet soaps. Filed by Charles of the Ritz, Inc., New York, July 13, 1945. Serial No. 485,756. Published Dec. 4, 1945. Class 4.

419,757. Insecticide. Filed by E. I. du Pont de Nemours & Co., Wilmington, Del., June 15, 1945. Serial

No. 484,562. Published Aug. 21, 1945. Class 6.

419,762. Lotions for cleansing the teeth. Filed by Dermetics, Inc., New York, June 21, 1945. Serial No. 484,832. Published Dec. 18, 1945. Class 6.

419,763. Insecticide. Filed by E. I. du Pont de Nemours & Co., Wilmington, Del., June 21, 1945. Serial No. 484,833. Published Dec. 18, 1945. Class 6.

419,765. Synthetic detergents. Filed by Solvay Process Co., New York, June 22, 1945. Serial No. 484,914. Published Dec. 18, 1945. Class 4.

419,766. Tincture of green soap. Filed by Seco Laboratories, St. Paul, Minn., June 25, 1945. Serial No. 484,999. Published Dec. 11, 1945. Class 6.

419,775. Shampoo. Filed by Lucky Tiger Manufacturing Co., Kansas City, Mo., July 13, 1945. Serial No. 485,782. Published Dec. 18, 1945. Class 6.

419,777. Insect spray. Filed by Arrow Engineering & Chemical Co., Flint, Mich., July 14, 1945. Ser-

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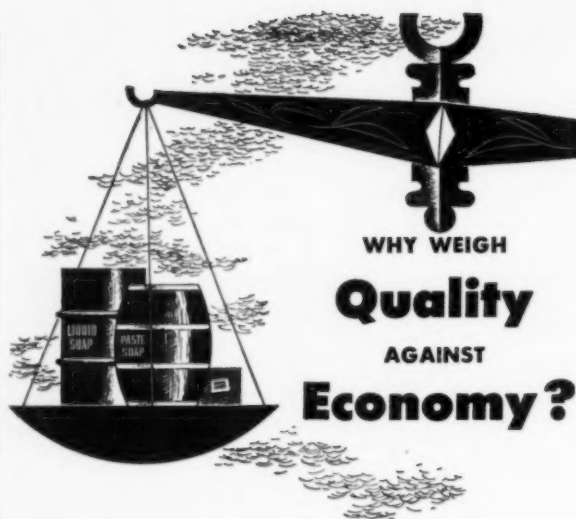
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ial No. 485,808. Published Dec. 18, 1945. Class 6.

419,781. Vegetable oil shampoo. Filed by L. Sonneborn Sons, Inc., New York, July 19, 1945. Serial No. 485,869. Published Dec. 18, 1945. Class 6.

419,974. Liquid floor waxes and a paste polish. Filed by Brulin & Co., Indianapolis, Oct. 16, 1944. Serial No. 475,355. Published Dec. 18, 1945. Class 16.

420,021. Insecticide. Filed by Airosol, Inc., Neodesha, Kans., Aug. 4, 1945. Serial No. 486,719. Published Jan. 1, 1946. Class 6.

420,030. Shampoo. Filed by Lefcourte Cosmetics Co., New York, Aug. 21, 1945. Serial No. 487,381. Published Jan. 1, 1946. Class 6.

420,031. Shaving cream, shaving soap and toilet soap. Filed by Parfums Charbert, Inc., New York, Aug. 21, 1945. Serial No. 487,381. Published Dec. 25, 1945. Class 4.

420,033. Wetting agents. Filed by Michel Export Co., New York,

Aug. 24, 1945. Serial No. 487,514. Published Jan. 1, 1946. Class 6.

420,078. Spray gun for insecticides. Filed by Phillips Petroleum Co., Bartlesville, Okla., April 13, 1944. Serial No. 469,310. Published Jan. 1, 1946. Class 23.

420,135. Chemical for insecticidal uses. Filed by Hercules Powder Co., Wilmington, Del., Aug. 18, 1945. Serial No. 487,255. Published Dec. 25, 1945. Class 6.

420,139. Deodorant block. Filed by Selig Co., Atlanta, Aug. 22, 1945. Serial No. 487,441. Published Jan. 1, 1946. Class 6.

420,141. Insect repellent. Filed by Hafco, Valley Stream, N. Y., Aug. 25, 1945. Serial No. 487,552. Published Jan. 1, 1946. Class 6.

420,198. Silver Polish. Filed by B. F. Natoli, East Rutherford, N. J., Apr. 10, 1944. Serial No. 469,210. Published Jan. 15, 1946. Class 4.

420,201. Parasiticide and bactericide. Filed by Sharp & Dohme, Inc., Philadelphia, Sept. 2, 1944. Serial

No. 473,867. Published Jan. 8, 1946. Class 6.

420,206. Lanolin soap. Filed by Botany Worsted Mills, Passaic, N. J., Oct. 19, 1944. Serial No. 475,477. Published Jan. 8, 1946. Class 4.

420,216. Dry deodorant preparation. Filed by International Chemical Co., Chicago, Feb. 26, 1945. Serial No. 480,239. Published Jan. 8, 1946. Class 6.

420,217. Cleaning compound for linoleum, tile, rubber, cork, etc. Filed by Edward B. Livingston, Kansas City, Mo., Mar. 12, 1945. Serial No. 480,831. Published Jan. 1, 1946. Class 4.

420,233. Water soluble alkali silicate for use in degreasing and cleaning metal, etc. Filed by Cowles Detergent Co., Cleveland, O., May 10, 1945. Serial No. 483,169. Published Sept. 11, 1945. Class 4.

420,245. Shaving creams. Filed by Golden Arrow Toiletries, New York, June 28, 1945. Serial No. 485,145. Published Jan. 1, 1946. Class 4.

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(Sodium Metasilicate—Pentahydrate)
REGULAR GRIND

DRYORTH*
(Sodium Orthosilicate—Technically
Anhydrous)
REGULAR GRIND DUSTLESS

DRYSEQ*
(Sodium Sesquisilicate—Technically
Anhydrous Equivalent)
REGULAR GRIND DUSTLESS

1st Quarter Soap Deliveries Down

Manufacturers' deliveries of soap in the United States in the first quarter of 1946 were smaller than in any calendar quarter since the second quarter of 1942, according to figures on soap sales and deliveries just released by the Association of American Soap & Glycerine Producers, New York. About 619,527,840 pounds of soap, other than liquid, having a sales value of \$92,268,680, plus 883,907 gallons of liquid soap, valued at \$1,058,571, were reported delivered during the first three months of 1946 by the 70 manufacturers who make about 90 per cent of the soap produced in the U. S. Total sales, liquid and other than liquid, amounted to \$93,327,431.

Total pounds of soaps delivered, other than liquid, in the first quarter of 1946 were 5.1 per cent less than in the fourth quarter of 1945, and were 23.4 per cent smaller than the amount delivered in the first quarter of 1945. Liquid soap deliveries showed an increase of 2.3 per cent over the last quarter of 1945. For 68 of the 70 reporting manufacturers whose figures could be compared, dollar sales in the first quarter of 1946 were 4.8 per cent less than in the fourth quarter of 1945, and 15.8 per cent below comparable figures for the first quarter of 1945.

On a per capita basis the 70 reporting manufacturers and the others who do not report their figures to the Soap Association, delivered an average of about five pounds of soap for every man, woman and child in the United States during the first quarter of 1946. Daily deliveries averaged between seven and eight million pounds.

Continued shortages of fats and oils and consequent restrictions by the government on the use of fats in making soap were assigned the responsibility for the decline in soap deliveries.

New Tall Oil Soap Powder

The availability of a saponified tall oil soap powder at about 7½ cents in carload lots was announced recently by George G. Johnston Co., 865 First Ave., New York 17. Tall-soap is a 90 per cent anhydrous powder of vegetable origin, containing

saponified fatty and rosin acids. Very high detergent action is claimed for the product which is said to be useful as an all-purpose soap that forms quick suds that break rapidly.

C. D. & C. A. Golf Dates Set

Gold tournaments of the Chicago Drug and Chemical Association for the coming season have been scheduled as follows, according to a recent announcement: Tuesday, May 21, a joint outing with the Chicago Perfumery, Soap and Extract Association; Friday, June 28, at Sunset Ridge Country Club; Tuesday, July 23, at Elmhurst Country Club and Tuesday, August 20, at Olympia Fields Country Club. The July 23 date will be a joint engagement with the Perfumers group.

Strike Threatens Aromatic Supply

A prolonged strike of coal miners will seriously affect the supplies of perfume raw materials, which are already short, according to a recent statement by Ralph M. Stevenson, sales manager, Givaudan-Delawanna, Inc., New York. He pointed out that the "shortage of supplies of phenol, benzene, toluene, and other coal-tar derivatives, will mean that the supply situation in phenyl ethyl alcohol, benzaldehyde, coumarin, synthetic musks and other perfume materials will take a turn for the worse.

"Any further shortages of aromatic raw materials at this time would be especially unfortunate because of the uninterrupted dearth of natural essential oils and flower oils from abroad, and because of the greatly increased demand for aromatics for perfumes, soaps, etc.," he concluded.

Writes on "Antu"

Robert F. Rumler, writing in the April-May Du Pont magazine, describes the new rodenticide, "Antu," in an article entitled "The Modern Pied Piper!" In his article Mr. Rumler describes the similarity between the discoveries of both DDT and "Antu," (alpha-naphthylthiourea). The work done by Dr. Curt P. Richter of Johns Hopkins Hospital and early applications of "Antu" are also covered.

Plan "Clean Up" Campaign

A luncheon, sponsored by Licensed Beverage Industries, Inc., New York, will be held on Tuesday, May 21 at the Waldorf-Astoria Hotel, New York, for the purpose of outlining a campaign for a nation-wide "clean up" drive on the part of retailers in the liquor industry. It is planned to bring together at the luncheon officials of the major supply and equipment houses in the U. S. Licensed Beverage Industries, Inc., is sponsoring a campaign among the 150,000 retail liquor outlets in the U. S. to "clean up," modernize and renovate their premises. The shortage of supplies, material and labor during the war frequently resulted in marked physical deterioration of these premises. As a result there is a great need for the kind of clean-up campaign it is sponsoring, the group reports. Although not all the materials are available for such a campaign, it is felt that there is a great deal of "clean-up" activity possible among retail liquor outlets which does not involve the use of raw materials now in short supply.

PEA's Hold Course at Fordham

The Professional Exterminators Association, Inc., New York, sponsored its first short college course in rodent control at Fordham University, New York, on April 24-25. Ernest M. Mills, U. S. Biologist, was the principal instructor. Drs. Leslie A. Stauber and John B. Schmitt of Rutgers University spoke briefly on rodent transmission of disease and rat fleas. The short course was mainly one of laboratory practice. Students worked out problems in weights and measures, characteristics of poisons, choice of foods, poison percentages, bait formulas, diluents, diluent poison formulations and did bait-mixing in small lots.

New Givaudan Booklet

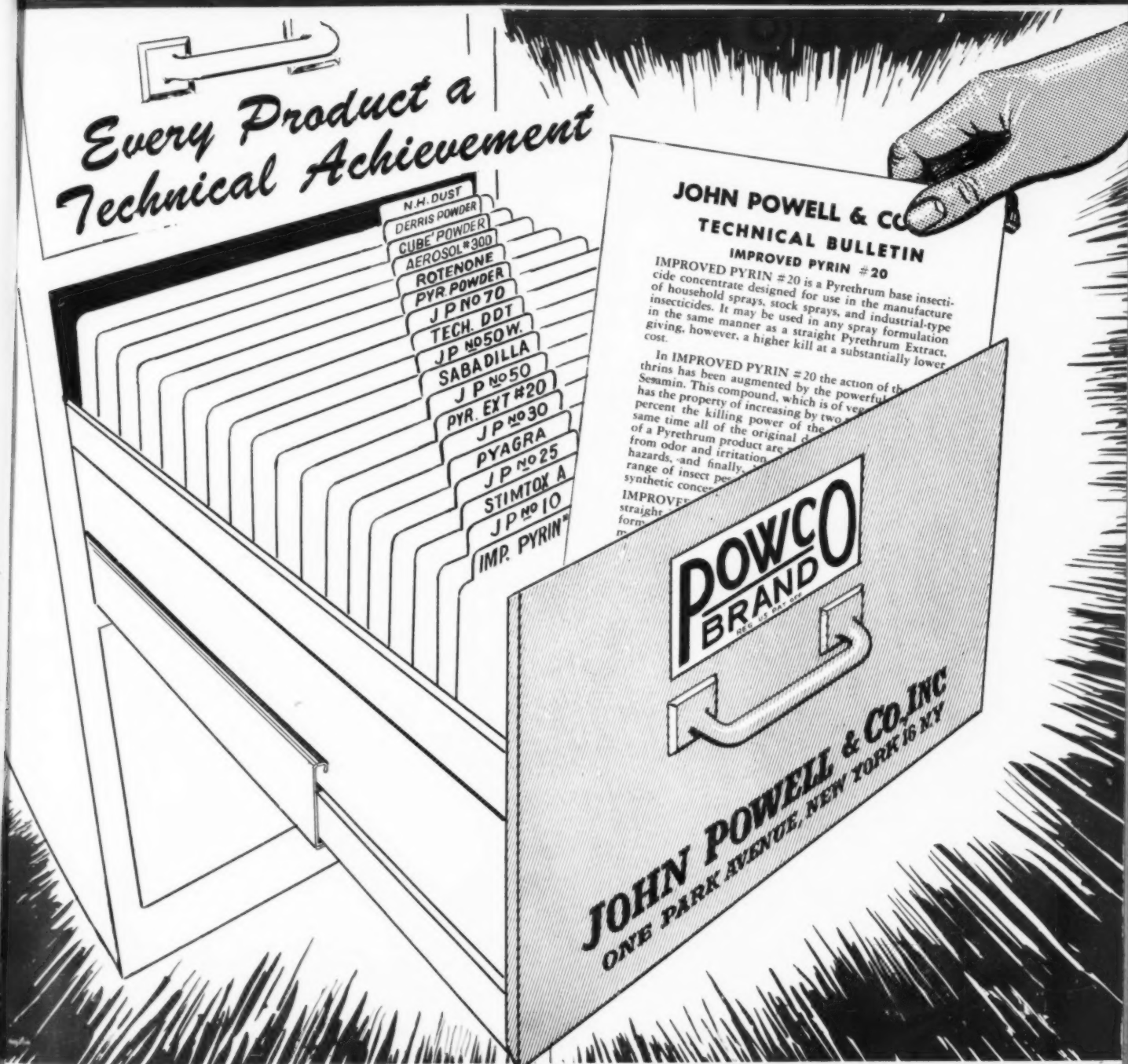
A ten-page booklet describing sunscreens agents, with charts of various tanning and sunburning rays, including formulas to meet the requirements of suitable suntan preparations, has been issued and was announced recently by Givaudan-Delawanna, Inc., New York.

SANITARY PRODUCTS

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STEEL...

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Weighing only 1½ pounds, this sheet of steel for sturdy insecticide cans provides maximum protection with minimum weight.



● Protection without poundage! That's what you get when you pack your *insecticides* and *chemical specialties* in durable, but lightweight, *steel cans*.

Pressure-rolled to fractional *thinness* and heat-tempered for greater *strength*, lightweight steel for sturdy cans keeps freight costs low for insecticides. *Shatterproof*, *fire-resistant* steel cans also eliminate the need for compartmented shipping cartons or special handling to protect insecticides and chemical specialties on their way to retail markets. And *compact* cans save space on trucks and trains... can be stored without danger of profit loss due to package damage.

Consumers, too, prefer insecticides packed in *convenient* cans that provide easy pouring from container to sprayer... stay neat and clean... can be recapped and safely stored for future use. And insecticides sealed in steel are protected against the deteriorating effects of light on the toxic principles of pyrethrum and rotenone.

Yes, for lower production and shipping costs and all-round product protection, you can count on *economical* steel cans.

Can Manufacturers Institute, Inc., New York

Major Reasons for Packing Insecticides in Cans

1. Cans won't break or chip.
2. Seal out light harmful to toxicity.
3. Are fire-resistant.
4. Lower filling, shipping and handling costs.
5. Can be colorfully lithographed for effective display and quick brand identification.
6. **Nationally Advertised** — This month alone more than 26,000,000 full-page, full-color ads in leading national publications are bringing home to shoppers the many advantages of buying merchandise packed in cans.

NO OTHER CONTAINER PROTECTS LIKE THE CAN

HERCULES

Thanite, Thanasol 70

TOXICANTS

For Better

Thanite-base Sprays Give Longer-lasting Repellency

Cattle sprays compounded with Hercules toxicants not only give rapid knockdown and high kill of stable, barn, and house flies, but also offer *longer-lasting repellency*.

Tests conducted by an independent laboratory prove conclusively that low-cost oil-base sprays containing 3 per cent Hercules Thanite* are superior in toxic effect, and measurably more repellent over longer periods, than the four other commercial sprays tested.

Thanasol 70 (a water-miscible form of Thanite) makes Thanite's effectiveness, economy, and long-lasting repellency available for water-base livestock sprays. As little as 4.3 per cent Thanasol 70 (equivalent to 3 per cent Thanite) yields a Peet-Grady kill 40.9 percentage points higher than the O.T.I.

For water-base sprays, Hercules produces Thanasol 70 + DDT Concentrate, which combines Thanite's quick kill with DDT's famed slow-but-sure action. To meet the demands for a straight residual type DDT spray for barns and stables, there is Hercules Water-Miscible DDT Concentrate.

For complete information on *all* Hercules toxicants for livestock sprays, flea powders and dips, and household sprays, send for the book, "The Thanite Family."

Naval Stores Department **HERCULES POWDER COMPANY** 961 Market St., Wilmington 99, Del.



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MODERN TOXICANTS



Livestock Sprays



Hercules' new family of toxicants

THANITE

Makes a fast-knockdown, high-kill spray effective against household pests such as flies, mosquitoes, bedbugs, silverfish, ants and moths.

THANITE + DDT CONCENTRATE

The addition of DDT to Thanite utilizes the best features of each toxicant. Makes a 100% "Knockdown," 100% "Kill" spray at a very low cost. Such sprays are highly effective—even against cockroaches.

THANASOL 70

A water-base toxicant especially recommended for use in kennels and on livestock. Thorough tests have demonstrated its effectiveness and long-lasting repellency, in both sprays and dips.

THANASOL 70 + DDT CONCENTRATE

Water-dispersible—combines residual effect against horn flies with speedy knockdown and high kill of stable flies. Ideal for making fully-effective livestock sprays.

AEROSOL DDT

Made only by Hercules and designed specifically for use in Aerosol bombs. Now available in quantity.

WATER-MISCIBLE DDT CONCENTRATE

Water-dispersible—for use in spraying barns, city dumps, garbage pails, industrial buildings, where the residual effect of DDT is required in the most economical form.

OIL-SOLUBLE DDT CONCENTRATE

A general-purpose concentrate for use wherever DDT in oil solution is required—such as in storage closets, around baseboards, kitchen sinks, and lamp cords.



INSIDE NEWS

MAY

PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y.

1946

Growing Use of Tin Can in Four Major Industries Proves Value as Container

The growing industrial use of tin containers in the food, paint, chemical and cosmetic fields—as well as other industries—proves its value as a sure-protection package for the products of these industries.

A brief industry-by-industry review of the value of tin cans to these four diversified fields suggests their usefulness elsewhere as well as their possibilities in industries not now using cans.

Canned Food

Highly perishable, food is best preserved in the tin can. For example, fruits and vegetables which are packed ripe are usually prepared and canned nearby, and as a result, practically none of the food's fresh nourishing goodness is lost.

The benefits from food in cans are widespread. To the food grower cans guarantee a safe way to keep his food fresh and protect the reputation of his product. To the canner they assure a dependable job in food preservation. For the shipper they are easier to handle—and safer, for cans normally do not break, chip, tear or shatter. Tin cans are easily stored. And cans resist wetness, dryness, light, heat and cold. Their use in all parts of the world testifies to their practical use in the tropics as well as in frigid climates.

Benefit to Consumer

The consumer also benefits from canned foods. The housewife can buy foods which are out of season. She can stock up on foods for a week or more without fear of spoilage. She can have canned foods for days when she hasn't time to shop or when unexpected guests drop in. Because they are already cleaned and cooked, canned foods save time in shopping, preparing and cooking. All that need be done as far as vegetables are concerned is to have the juice heated to warm the vegetables.

And, the consumer is always sure of uniformity in the quality of canned foods.

Paints Profit, Too

The same sure protection is given also to paint products. Here, the container must be strong, durable and able to stand up under knocks and bangs . . . a container that the painter can use. Paint can be mixed right in

the can and may be applied directly from it. And when the job is done and some paint is left over, the cover can be pressed back on to protect the paint against air, light and dust.

Safe for Chemicals

Because tin containers shut out light, they are very desirable for such chemicals as must have this kind of protection. They are especially desirable for chemicals which may lose this effectiveness if exposed to air and other outside elements such as wetness and dryness. The tin can is so constructed that none of these elements can penetrate its walls.

And tin cans are also vitally important for packaging chemicals which may be dangerous if they should leak out. The tin container is the safe container for it's airtight, and can take rough treatment without soaking, tearing, cracking or breaking.

Keeps Powder Dry

In the cosmetic field the tin can finds great use as a package for powders. For instance, tooth, talcum and foot powders stay dry and free-flowing when packaged in tin containers. Ingredients in such containers can withstand humid conditions in bathrooms and can stand on wet surfaces without danger of sogging and, finally, tearing. They also resist breakage when they fall from medicine chests.

In all four major fields—in fact in every field, there is another important reason for using tin containers. They are economical! While costing no more than other type containers at all times, they are frequently considerably less expensive. They are longer-lasting, too. They appeal through appearance, and this advantage is possible because National Can Corporation supplies cans with the manufacturer's own attractive design lithographed right on the can.

National Can Corporation offers the personalized service of its salesmen whose years of experience in canning problems are backed by the many more years of research, development and production of cans by National Can Corporation. Phone or write your nearest National Can office or the executive offices: National Can Corporation, 110 East 42nd Street, New York 17, N. Y. 1266

Sirup For Ice Cream

New methods are reported being found for preparing invert sirup for the manufacture of ice cream. These manufacturers needed some method whereby they could use a pasteurizing vat or similar type of equipment for inverting the sucrose. This would necessitate a procedure in which a lower temperature could be employed for

the inversion process, because with most pasteurizers of the holding type, it is virtually impossible to heat the contents to 225 degrees F., the approximate temperature required to boil the sugar solution.

Two methods were developed in which temperatures as low as 175° F., could be used. The hydrolyzing agent could be either phosphoric acid or tartaric acid. 1268

Weed Killer Has No Ill Effects on Animals

Use of 2,4-D in spraying pastures to kill weeds has not proved injurious to cows or sheep grazing on the treated vegetation, it is reported according to results of recent tests. The experimenters found no indication that any of this herbicide, known chemically as 2,4-dichlorophenoxyacetic acid, passed from the digested herbage through into the cow's milk. Even when they added the pure chemical to the grain ration of a cow at the rate of 5.5 grams a day for more than 100 days she showed no ill effects in weight, production of milk or even in appetite.

Some of the chemical fed in the ration showed in tests of the blood serum, but there were no indications of it in any other parts of the body. A calf fed on the milk of a cow receiving the 2,4-D developed normally and the chemical could not be found in its blood serum.

Because of its bearing on their own work and the general interest in the possible effects of a chemical used directly or indirectly in the production of farm crops, the experimenters call attention to a recent report that a man had taken a daily dose of half a gram of purified 2,4-D every day for three weeks with no ill effect.

Although it was found that the 2,4-D mixed with a commonly used spray spreader called Carbowax is not toxic to sheep and cows, the experimenters caution that their conclusions do not cover proprietary mixtures of 2,4-D and other materials that might possibly be bad for animals. 1269

Surpasses Shellac in Preserving Papers

There has been an urgent need for a substance more suitable than shellac in the preservation of smoked-paper records, such as kymograph records in physiological and pharmacological laboratories, and protection of paper labels on reagent bottles and other laboratory equipment.

A thermoplastic polymer developed has been shown to be more suitable than shellac. A few experimental tricks demonstrated readily that this chemical in a suitable solvent can replace shellac. The paper record dried in ten minutes after treatment. 1270

Can Lures New Fish

Blue Marlin, heretofore known only to the deep-sea sporting fishermen vacationing off the West Coast, now makes its debut to the general public in familiar No. 1 size tin cans. Canned in brine, the firm, pink-fleshed

Dry Yeast from Beechwood

A process, involving the use of sulphite liquor resulting from the manufacture of cellulose from beechwood, and neutralization of the liquid with ammonia is described in detail in a Department of Commerce report. The process is used for manufacturing dry yeast by utilizing reserve carbohydrates that are normally wasted. 1267

NATIONAL CAN



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marlin may become a favorite . . . along with the salmon and tuna that were unknown to the public less than 35 years ago! 1271

Soap in Synthetic Rubber Processes

Two recent patents are primarily concerned with methods of coagulating synthetic rubber latices. In one instance, a stable aqueous polymer dispersion, prepared by polymerizing butadiene-1.3 with a copolymerizable monomer in the presence of a water-soluble soap as an emulsifying agent, is coagulated by mixing this dispersion with an aqueous solution of an aluminum salt. In the second patent, synthetic latex is formed by the emulsion polymerization of a member of the class of compounds consisting of butadiene, isoprene, piperylene, dimethylbutadiene and chloroprene in the presence of a water-soluble fatty acid soap. 1272

Canned Jellied Fruit

A jellied mixed fruit dessert is one of the new possibilities among canned foods which one day may be selling in grocery stores for serving on American dinner tables, as a result of wartime research for the Army.

The Army asked for a fruit dessert for field rations to satisfy the soldiers' appetite for fruit and also to contribute Vitamin C to their diet. What was needed was a product that would keep well, both in cold climates and tropical heat, would be easy to carry, to open and to eat out of hand with no dripping juice to stain uniforms and attract insects.

Such a product was developed using 60 percent fruit and 40 percent fruit juice jellied with fruit pectin. A canned jellied pineapple dessert was made, also a jellied fruit mixture of diced peaches, pears, cherries, pineapple, white grapes and apricots. The jelly was stiff enough to come out whole and hold its shape when eaten out of hand. It held its flavor, color and texture in both cold and hot climates. The Army procured 25 million cans to supply the troops after the products were developed. Ten million cans were used by the Army in the first three months of 1945.

For civilian use a less stiff, more delicate jellied mixture has been developed. 1273

Technical Topics

SCENT FIXATIVE—A scent fixative, claimed to be inexpensive and readily available, is described in a recent patent. The fixative is obtained from treating the leafy portion of *Myrica asplenifolia* with petroleum ether, separating the solids from the solution, and removing the petroleum ether from the solution to obtain a waxy extract. Lignoïn and petroleum ether may be employed in a mixture to make the extraction. 1274

PERFUMED SOAP—In developing a successful perfume for soaps special attention must be paid to careful selection of the base, it is announced. Since top notes, etc., are generally of less importance, their effect will undoubtedly be lost in the course of storage and under the influence of the soap in general. 1275

STUDYING FLY FLIGHTS—Spraying or dusting mosquitos with fluorescent compounds is reported for studying the direction and distance insects fly. 1276

LATHERY SOAPS—The ability of lecithin to stabilize lather makes it an interesting constituent of toilet soaps. While lecithin is said to tend to reduce the bubble size, it also produces a pleasing creamy effect in the lather. 1277

FUMIGATING PESTS—It is reported that fumigation with methyl bromide (1 pound to 4,000 cubic feet of space) effectively kills rats and mice in apple cold storages without causing visible injury to the fruit or affecting its taste. 1278

NEW INTERESTING CHEMICAL—A new hormone-like chemical, called 2.4-Di for short but bearing the full title of 2.4-Dichlorophenoxyacetic acid, is reported to kill weeds such as dandelion, morning glory, thistle and burdock without harming ordinary grass as well as killing ragweed which is responsible for 90% of the hay fever in the country. 1279

DECAY OF FRESH FRUIT ELIMINATED—Fresh whole fruit may be protected from decay by treatment with alkali-forming metal hypochlorite solution with solution containing reducing agent and finally with a solution of water soluble salt of hydroxy diphenyl, according to a recent patent. 1280

ADHESIVE FROM DRIED BLOOD—A by-product of blood was recently patented. The patent covers a process of obtaining an adhesive material by mixing insoluble dried blood with a caustic alkali and water. 1281

OVERCOMES BLOOD CELL DISORDER IN DAIRY COWS—Cattle afflicted with poikilocytosis are said to be cured by supplementing their diet with pyridoxine or a source of the entire B complex such as dry yeast or live yeast. 1282

LURES FRUIT-FLIES—Shredded orange peel in aqua ammonia has been found efficacious as a lure for the fruit-fly and not to be attractive to blow-flies and other insects which soon foul traps baited with mixtures of a vegetable meal and ammonium carbonate. 1283

NEW WEED KILLER—One of the latest, and reputedly more effective, weed killers in the over-stimulating plant hormone category is 4-chlor-2-methylphenoxyacetic acid. 1284

MEAT FLAVORING COMPOUND—A new patent for a dry seasoning composition containing glycerine is described as useful in seasoning meat products, especially ground meat, meat loaves and sausages. 1285

NICOTINIC ACID—A process for producing nicotinic acid by treating 5.7-Dinitro-8-quinolinol and nitric acid has been obtained for patent. 1286

SYNTHETIC CAMPHOR—A new process for synthetic camphor uses cymene and alcohol, with a mercury salt as a catalyst. 1287

Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquiries to the original source of the article. Write to National Can Corporation, 110 East 42nd Street, New York 17, N. Y. Please mention the number at end of article — also name of the magazine you saw it in.

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DU PONT

Announces

HEXACHLOROCYCLOHEXANE

Another Forward Development in Insecticides

HEXACHLOROCYCLOHEXANE is a new and outstanding insecticide. In the annual Hurter Memorial Lecture, delivered on March 8, 1945, by Dr. R. E. Slade, Research Controller of Imperial Chemical Industries, he stated, "There has now come to light what promises to be one of science's important contributions to the welfare of man." Dr. Slade referred to Hexachlorocyclohexane which was developed as an insecticide by Imperial Chemical Industries under the following additional names: benzene hexachloride, 666, and Gammexane.

Du Pont has confirmed the British records of efficiency of this remarkable insecticide in its own laboratories, and is privileged to announce it will have Hexachlorocyclohexane available this season in moderate quantities for experimental use. Inquiries from research institutions and qualified investigators are invited, and on request a copy of Dr. Slade's lecture will be mailed as soon as it is available for distribution. Grasselli Chemicals Department, E. I. du Pont de Nemours & Company, (Inc.), Wilmington 98, Delaware.



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...THROUGH CHEMISTRY

5 POUND AEROSOL BOMB !

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Capacity 750,000 to 1,250,000 Cubic Feet

Can be had with or without DDT

WITH 3% DDT
Where the use of
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A number of good territories still open for distributors with setup for DIRECT sales to commercial users. Income continues after original sale is made. Refill is a steady source of revenue. Write for further details.



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Aerosol Insecticide
Bomb Available for
Commercial Use.

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READY FOR INSTANT USE

REFILLABLE AT LOW COST

LASTS 5 TIMES AS LONG AS AVERAGE BOMB

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MANUFACTURERS OF MULTI PRODUCTS
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Her eyes have to make the first move . . .

IF HER HANDS ARE TO REACH FOR YOUR PRODUCT



**Step up the EYE power of
your package at the point
of sale . . . with whiter, brighter**

Coated Lithwite cartons

IN TODAY'S OPEN DISPLAYS, "eye power" in a package really counts—and *Coated* Lithwite cartons do have eye power. That's why you'll find so many leading products in *Coated* Lithwite cartons. Famous *Coated* Lithwite paperboard is smooth, velvety. Its chalk-free surface is a perfect base for printing inks. Reproduces pictures with true-to-life realism.

Made by a revolutionary new process, *Coated* Lithwite is the amazing paperboard that is formed, made and coated in one high-speed operation. Proved and improved for seven years.

Fewer "jammers" and "leakers." *Coated* Lithwite folds without flaking or shattering. Takes a tight positive seal. Production of *Coated* Lithwite cartons is currently sold up. But get full facts about *Coated* Lithwite cartons now. Ask a Gardner-Richardson sales representative to call.

More eyes reach for your product in . . .

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speeds up ALL maintenance cleaning!

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BOON wets and dislodges dirt quickly—with a minimum of manual effort—to leave bright, streak-free surfaces that *stay clean longer!*

BOON is ideal for all maintenance cleaning. It is completely soluble (contains no abrasives); it is self-sudsing *but contains no slippery soap*. It is harmless to hands and surfaces . . . it is easy to handle and use.

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Our space in the June issue
of SOAP will be used
for the first announcement
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These new materials will
profoundly influence the
formulation of household
sprays and aerosols
for the 1947 season
and thereafter.



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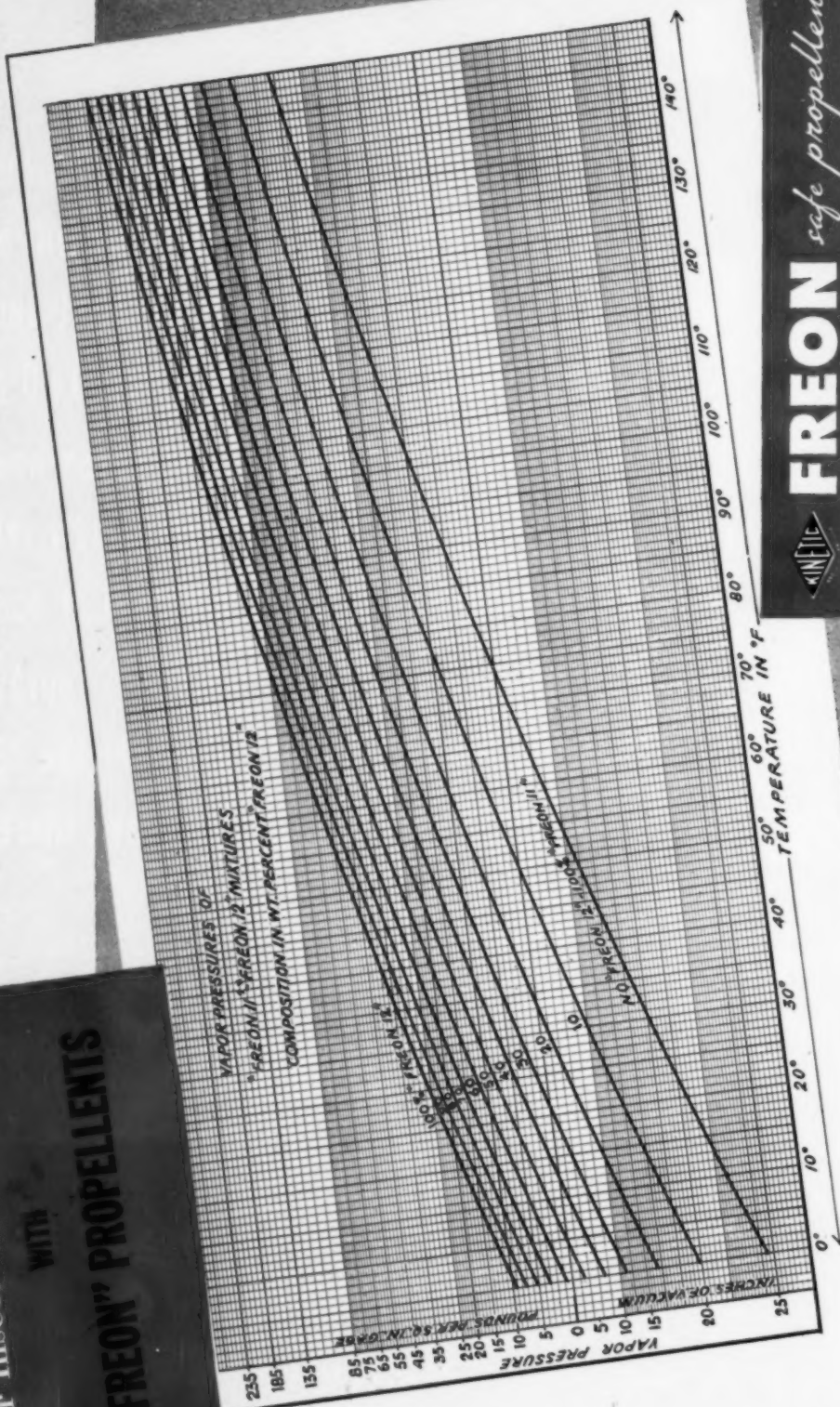
WITH

"FREON" PROPELLENTS

THE chart below illustrates the vapor pressure range of "Freon-12" and "Freon-11" mixtures at various temperatures. Important to aerosol manufacturers is the fact that mixtures of 20% "Freon-11" in 80% "Freon-12" to 10% "Freon-11" in 90% "Freon-12" are generally considered to carry all the DDT that is necessary for an effective aerosol. Thus oil in formulas can be reduced or eliminated — giving a cleaner, less odorous spray.

"Freon" safe propellents are odorless . . . non-toxic . . . non-irritating . . . non-flammable . . . won't stain fabrics or finishes. All these are properties that the public demands in aerosols.

For a free large-scale copy of the vapor pressure chart and also of another chart showing solubility isotherms of DDT in "Freon-11" — "Freon-12" mixtures, write: Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington 98, Delaware.



FREON

safe propellents

Freon" is Kinetic's registered trade mark for its fluorine refrigerants and propellents.

Say you saw it in SOAP!

May, 1946

**These Two Great Quality Products Will
Increase Your Sales and Profits!**

PURO *Deodorants*

More Economical—Longer Lasting



Puro DEODORANT BLOCKS

MADE TO U. S. NAVY SPECIFICATION #31-D-23 (INT.)

A Proven Product in Popular Demand
Puro deodorant blocks are ideal for every public use. Approved for U. S. Navy use. Carefully compounded perfume oils are fused into compressed Paradichlorobenzene under tremendous pressure. Assures long service, great economy, effective results, maximum customer satisfaction. Attractively packed in special tubes that protect block from evaporation over a long period. Available in Surf, Lilac and Rose odors. Weight 4 oz.

Every user of Deodorant Blocks is a potential Sana-Bole customer because there are more toilets than urinals. Double your profit by handling these two great champion sellers.



Puro SANA-BOLE DEODORANT

U. S. PAT. NO. 2011732 & DES. PAT. NO. 92429

Cash In On This Sensational Seller

Opens entire new market. Sana-bole gives thorough odor protection for every bowl. Patented "Snap-on" feature keeps the cake secure—almost unseen. Fine perfume oils and Paradichlorobenzene permanently combined in giant power presses. Sana-Bole overcomes objectionable odors, substitutes pleasing, delicate flower-like fragrance. Wire hanger is rust proof. Cellophane wrapper assures full protection against evaporation before use. Large 4 oz. cake—same weight as standard size urinal deodorant blocks.

THE Puro COMPANY, Inc.
(Established 1929)

2801 LOCUST STREET

ST. LOUIS 3, MO.

(Write for Samples and Jobber Prices—IMMEDIATE DELIVERY)

May, 1946

Say you saw it in SOAP!

105

Official Test Insecticide . . .

SUPPLIES of the 1945 Official Test Insecticide for evaluating insect sprays by the Official Peet-Grady Method are available from the office of this Association. The 1945 O.T.I. is official for testing from June 1, 1945 through May 31, 1946. O.T.I. of any previous year is obsolete and should not be used.

Supplies of 1945 O.T.I. are available at \$5.00 per dozen six-ounce bottles to members of this Association. To others, there is a service charge of \$1.00 per dozen. Single bottles are \$1.00 each. Check with order is required.



National Association of Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street

New York

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FACTS FROM THE SOURCE

DDT

**Remember — it was Geigy who
DISCOVERED the insecticidal value of
*dichloro-diphenyl-trichloroethane (DDT)***

- It was in 1939 that the Geigy Company discovered the amazing insecticidal value of DDT.
- And Geigy has consistently pioneered in the work which followed—which has won for DDT^{*} insecticides such wide acclaim.
- Seven years of research and application places the Geigy Company in the position of leader in the DDT field.
- Processors can rest assured that Geigy's DDT *know how* can prove a decided asset in the production of effective, dependable insecticides.
- Geigy DDT has the highest para-para-isomer content of any technical grade DDT yet in production.
- Geigy NEOCID^{*} DDT compositions are tried-and-proven formulations which can be used for further extension by spray and dust manufacturers with assurance of satisfactory consumer-products.
- Geigy offers full cooperation. And when you call on Geigy— you get DDT facts from the source.

*Reg. U.S. Pat. Off. Insecticidal Compositions containing DDT are covered by Reissue Patent No. 22,700.

GEIGY COMPANY, INC.

Originators of DDT Insecticides

89-91 BARCLAY ST., NEW YORK 8, N. Y.

Which of these Buying Factors do You Sell?

Superintendent? Dietitian? Housekeeper?
Directress of Nurses? Engineer?
Maintenance Supervisor? Purchasing Agent?
Pharmacist? Business Office Manager?
Operating Room Supervisor? Chef? Laundry Head?
 Maternity Room Supervisor?

The chances are you sell one of them in one hospital and another in the next. For in spite of the fact that all hospitals have one thing in common, as havens for the sick and injured, their management practices vary as widely as is the case in any industry where you sell your products or services.

At Hospital "A" a given department head may have full authority to purchase expendable supplies but may not be empowered to buy equipment or fixtures. At Hospital "B" all purchases for the same department may be cleared through a purchasing agent. Hospital "C" may follow a completely different procedure where the superintendent buys upon recommendation by the department head.

Thus the department head may vary in importance from cases where he has full authority to others where he has none. And this degree of authority may vary greatly for one product as compared with another.

For this reason advertising plays a very important part in selling to the hospital market. Properly conceived and carried deeply into the complex administrative structures of hospitals, it

can sell those who influence as well as control buying. In a compact, concentrated market, where individual purchases are normally very large, such advertising can and does produce results greatly out of proportion to its cost.

HOSPITAL MANAGEMENT can take your story to all the people who influence purchases. Our balanced editorial program of "how to do it" articles and the outstanding news service of the field, produces readership which takes hospital people right to your story.

More than three-quarters of the hospitals where HOSPITAL MANAGEMENT is received route copies from one department head to another. And in articles, correspondence and display advertisements in each issue, we have urged even greater practice of this procedure so that our penetration into the market will be even greater.

Hundreds of advertisers have found this the ideal medium for increasing their sales in one of the greatest of markets. Ask for our circular giving the complete story about HOSPITAL MANAGEMENT, or better yet, have one of our representatives give you that story.



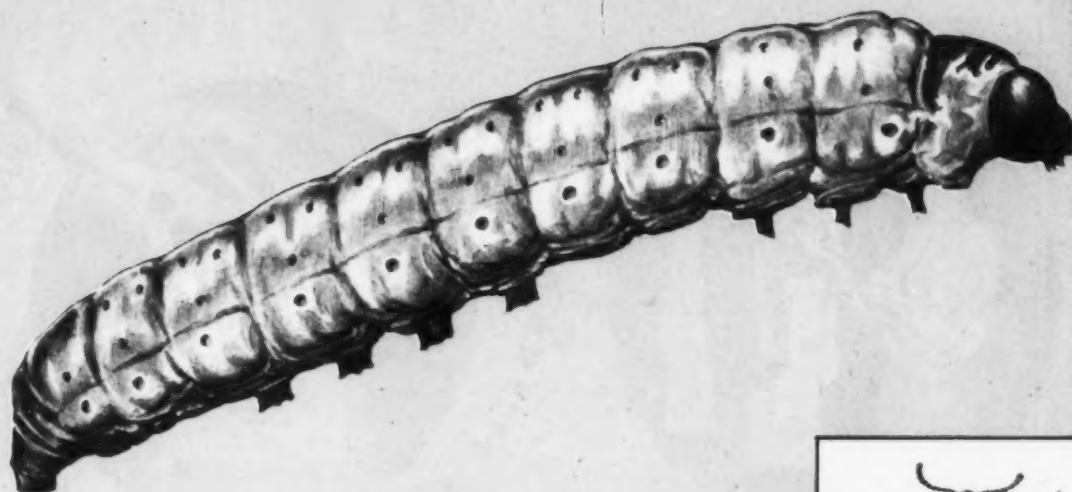
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THE MARKET
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Hospital Management

The Only Hospital Publication which is a member of both the ABC and ABP.

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CODLING MOTH—causes millions in annual damage to apples and other fruits



Baker's DDT

(Dichloro-diphenyl-trichloroethane)

FOR HORTICULTURAL USES

Three of the most costly agricultural crop pests are the codling moth, the Colorado potato beetle and the Japanese beetle. Experiments with DDT for the control of these horticultural pests have shown promise. In preliminary tests to control the codling moth, one-half to one pound of DDT was used per 100 gallons of spray, with good results.

Tests in the agricultural field, to be conclusive, generally require several growing seasons. As a result, only tentative formulation recommendations have

been made pending further research.

For those companies who desire to consider the use of DDT for the control of horticultural pests or any other pests, write the J. T. Baker Chemical Company for our DDT Bibliography.

Baker's DDT is a fine crystalline powder and is available in 25, 50, 100 and 200 pound containers. It has a minimum setting point of 89° C. Write for prices. Tell us your requirements. Address J. T. Baker Chemical Company, *Executive Offices*, Phillipsburg, N. J.



COLORADO POTATO BEETLE



CODLING MOTH



JAPANESE BEETLE



Baker's Chemicals

C. P. ANALYZED • FINE • INDUSTRIAL



FOR REPEAT SALES

In Today's Competition

PLEASE HER ONCE...



AND



SHE'LL BE BACK FOR MORE

HUDSON Is Ready—Are You?

HUDSON is ready—right now—to help you round out your merchandising program—ready not only to recommend BUT ALSO TO SUPPLY the exact Sprayers or Dusters best qualified to assure successful application of your products. To save time, see your local directory for the name of your HUDSON representative. He is fully qualified to give complete information on HUDSON Sprayers and Dusters. Or write us direct. Do it today!

*HUDSON

Can Help You Please Her

Steady sales for your product require building—and then maintaining—consumer acceptance.

This means selling users so effectively on their first experience with your brand that they'll automatically ask for it by name next time they buy.

This also means that the sprayer or duster you sell to *apply* your insecticide, disinfectant, moth product or deodorant must do *the best possible job*. It must be designed for perfect application and easy use . . . must give your product the greatest opportunity to guarantee the confidence of users.

HUDSON Sprayers and Dusters do just that. As the world's largest manufacturers of Sprayers and Dusters, this company can furnish the exact equipment exactly suited for your products . . . equipment that will help win steady customers for your brand.

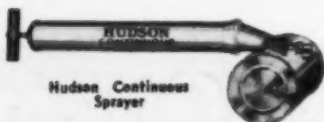
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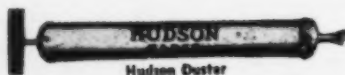
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Tested and Proved
EQUIPMENT



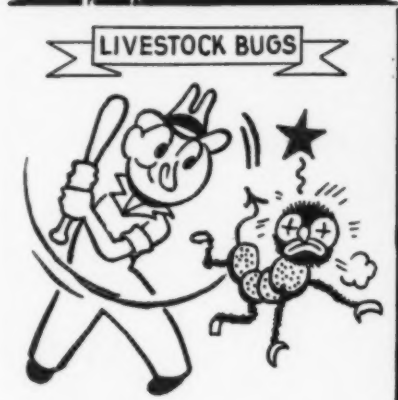
Hudson Continuous Sprayer



Hudson Duster



HUDSON Wizard Elektrik-Spray Electric Sprayer and Duster



PENICK SUPER INSECTICIDE BASES FOR SUPER CLEAN-UP JOBS

Whether it's for the housewife, or the PCO, or compounded for the farmer or warehouse owner, Penick has a suitable basic insecticide that, when mixed to the necessary strength for the particular job, will *knock down* and *knock out* pests and vermin.

For house fly and mosquito. Pyrefume Super 20
For roaches and other household pests. . . . Pyrethrum, Impregno, and DDT
For large acre farms. DDT, Pyrethrum, and Rotenone
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For plant sprays. Foliafume
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Write for descriptive literature on our full line.

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The MODERN Treatment for TERRAZZO, MARBLE AND CEMENT FLOORS



Properly laid non-resilient floors can last a lifetime if given the right care, with the right materials. Since labor is 95% of the cleaning cost, it obviously pays to use the best. To thousands of users, that means the Franklin line—

FRANKLIN'S TERRAZZO WAX

—for the show room type floor where a high gloss is desired. Restores and maintains original color and beauty. Prolongs floor life and reduces maintenance costs. **ANTI-SLIP.**

FRANKLIN'S TERRAZZO SEAL

—for those who want a more permanent seal. Prevents dusting and pitting. Restores original color and beauty.

FRANKLIN'S TERRAZZO & MARBLE CLEANER

—seals and cleans in one operation. Seals the porous cement between marble chips —prevents dusting and pitting. Keeps damp mopping at minimum. **ANTI-SLIP.**

FRANKLIN'S CEMENT TREATMENT

—produces a dustproof finish by sealing in the fine particles of sand and cement. Places a strong, wear-resisting film on the surface.



FRANKLIN RESEARCH CO.

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A NEW ERA IN INSECT CONTROL

VELSICOL

1068*

New

KILLING POWER

New

RANGE OF EFFECTIVENESS

New

PHYSICAL CHARACTERISTICS

A reprint of the article on VELSICOL 1068 by Dr. C. W. Kearns, Dr. L. Ingle and Dr. R. L. Metcalf which appeared in the December 1945 issue of the Journal of Economic Entomology is now available for distribution.

Samples of VELSICOL 1068 (20% CONCENTRATION) for test purposes in the production of fly and roach sprays and residual-type sprays are obtainable on request as are samples of technical grade VELSICOL 1068 for experimental purposes in the agricultural field.

OTHER VELSICOL INSECTICIDE PRODUCTS

THE METHYLATED NAPHTHALENES**

VELSICOL AR-50 · VELSICOL AR-60 · VELSICOL AR-70 · VELSICOL NR-70

Correspondence is invited in regard to uses and formulations of the above materials.

* U. S. PATENTS PENDING

** U. S. PATENT NO. 2,347,265

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Manufacturers of Insect Toxicants • Aromatic Solvents • Synthetic Resins • Coresin Core Oils

General Offices: 120 East Pearson Street • Chicago 11, Illinois

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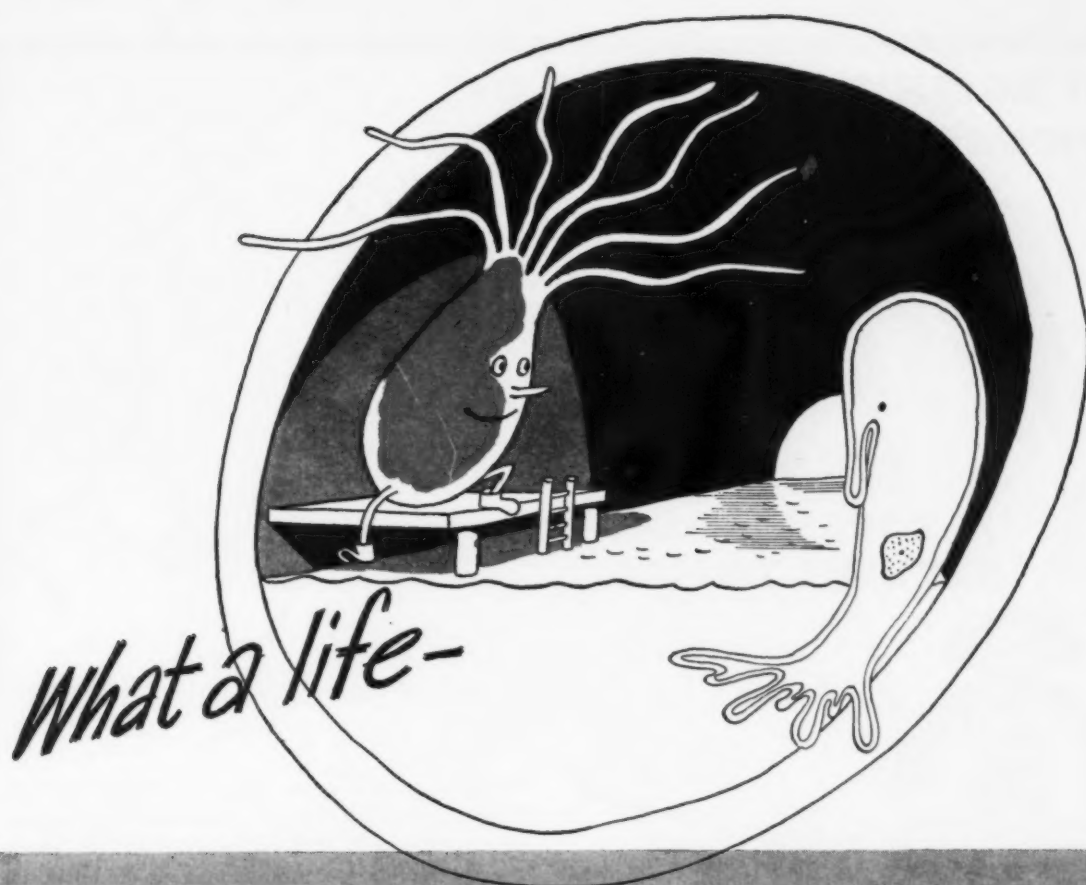
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Chlorine-susceptible microorganisms, bacteria and algae succumb quickly when they encounter PITTCHLOR. A high-test calcium hypochlorite containing a minimum of 70% available chlorine, PITTCHLOR is highly effective for the chlorination of water supplies . . . for the treatment of sewage . . . and for disinfection, deodorizing and general sanitation. Easy and economical to use.

Stocked by leading jobbers—5 lb. resealable cans (9 per case), 3 1/4 lb. cans (12 per case) and 100 lb. drums.

Send for descriptive literature.

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IT DOESN'T TAKE A LOT OF
FIGURING TO SEE THAT THE

REFILLABLE
MIST-O-MIZER
by REGAL

IS TOPS AMONG
AEROSOL BOMBS



\$2.95
fair traded
\$3.25
west of Rockies



Yes it's easy to see why the Regal MIST-O-MIZER—a \$2.95 Fair Traded Seller—is tops among aerosol bombs! A \$4.00 value for only \$2.95. Made by the only chemical manufacturer in the business!

Backed by experience gained in filling millions of aerosol dispensers during the war! Designed especially for civilian use! Safetied to the limit of modern manufacturing ability! Filled with the deadliest insect-killing combination known to man! Packaged in the most-attractive, sales-getting carton on the market! Refillable for repeat sales at \$2.00.

Yes, MIST-O-MIZER is tops among aerosol bombs because it offers the safest, most effective and economical way ever developed to dispense deadly DDT and pyrethrum. This is the famous dispenser that "mistomizes" pre-blended DDT and pyrethrum into millions of micron-sized particles, shoots them straight up into the air and allows them to settle naturally into every nook and cranny. This is the killer that rids households of mosquitoes, flies, moths, cockroaches, ants, bedbugs and other pests.

Why else would we be getting such a volume of repeat orders from the most important buyers in the nation? From the leading chain, department and mail-order houses everywhere? Why else would we be urging you to get your order in today!

MIST-O-MIZER is ready for delivery. Write, wire or phone Regal for complete information.

REGAL

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Brooklyn 22, New York

for approved
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SANTOBANE

In approved formulations for livestock and pet treatment, Santobane®—Monsanto's Dichloro-Diphenyl-Trichloroethane—is rapidly gaining wider acceptance. Its uniform quality and effectiveness have been demonstrated in laboratory tests and actual use.

Santobane is an outstanding product for incorporation in either liquid or dust formulations. Experimental samples will be furnished on request. Write: MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

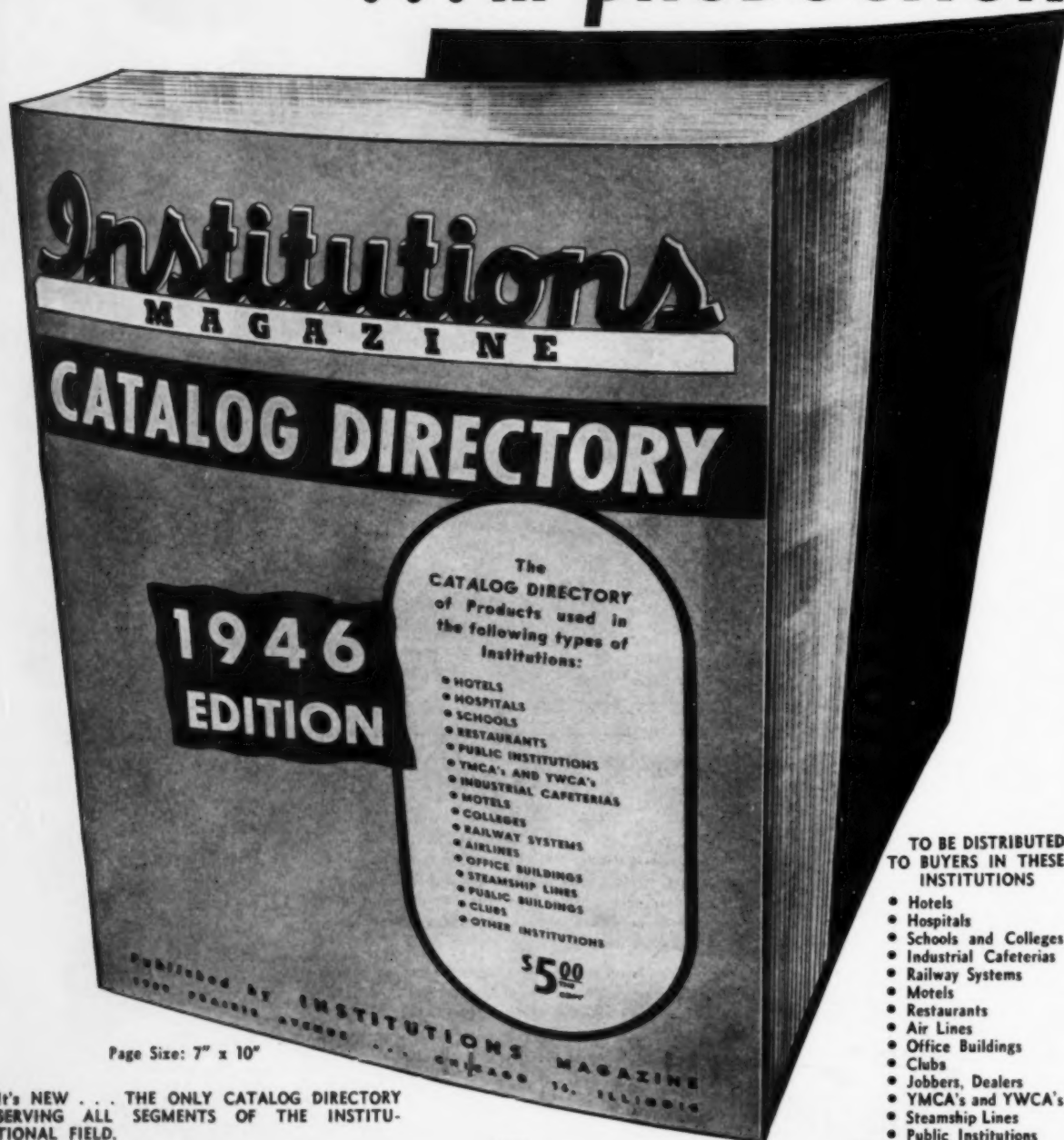
*Reg. U. S. Pat. Off.



PLANNED for YEARS

INSTITUTIONS CATALOG DIRECTORY has been in the planning stage for YEARS. Announced recently by the publishers of INSTITUTIONS Magazine, this new Catalog Directory has been developed by an organization with a record of over 56 years of successful catalog and business paper publishing.

... in PRODUCTION



Page Size: 7" x 10"

It's NEW . . . THE ONLY CATALOG DIRECTORY SERVING ALL SEGMENTS OF THE INSTITUTIONAL FIELD.

TO BE DISTRIBUTED TO BUYERS IN THESE INSTITUTIONS

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.. CONSULT YOUR **A**DVERTISING **A**GENCY

NEW CATALOG DIRECTORY IDEAL FOR MANUFACTURERS of MAINTENANCE PRODUCTS

for MONTHS

For many months, a large, experienced production and compiling staff has been entirely engaged in consolidating the effort of years of close relation with all types of products and equipment used throughout the various institutions.

to be PUBLISHED SOON

The final indexing and classifying of thousands of products and manufacturers will be completed soon. Scheduled for publication in the near future, INSTITUTIONS CATALOG DIRECTORY will fill a long-felt need for a complete, centralized reference source for product information among the buyers throughout the institutional field.

Never before has such a comprehensive Catalog Directory been available to this field and since its usefulness will depend upon its completeness . . . almost 70,000 national manufacturers and their products are being screened for classified product listings and trade names.

For years, the ever-increasing demand by these buyers for a ONE-VOLUME source of product information has been so insistent that it has resulted in the publishing of INSTITUTIONS CATALOG DIRECTORY. This comprehensive Catalog Directory will bridge the gap which existed between manufacturers and buyers of all types of products required in the operation of institutions. It provides the manufacturer with an ideal opportunity to place complete purchasing and specifying data in one, convenient, easy-to-use form which will be kept on the desks of all important buying factors in the field. The circulation of this comprehensive Catalog Directory will parallel closely that of INSTITUTIONS Magazine.

Designed to serve all types of institutions, INSTITUTIONS CATALOG DIRECTORY will contain five sections as follows: 1 . . . **Manufacturers' Catalog Section** in which leading manufacturers will display their products for quick reference. 2 . . . **Classified Directory Section** . . . will be generously cross-indexed and will list manufacturers and their products used by all types of institutions. 3 . . . **Trade Name Section** which will list Manufacturers' Trade Names for instant reference as buyers are constantly trying to purchase items by trade names only. 4 . . . **Reference Data Section**—will contain codes, charts and other reference data used daily. 5 . . . **Name and Address Section**. This section will list complete names and street addresses of thousands of manufacturers whose products are classified in Section 2.

INSTITUTIONS MAGAZINE CATALOG DIRECTORY
1900 PRAIRIE AVENUE, CHICAGO 16, ILLINOIS

May, 1946

Say you saw it in SOAP!



Catalog Section of this New INSTITUTIONS CATALOG DIRECTORY, manufacturers of maintenance products are assured of reaching all related divisions of the huge institutional field.

With the publication date scheduled in the near future, it is stated that all manufacturers of products and equipment applicable for the institutional field should investigate immediately the opportunities INSTITUTIONS CATALOG DIRECTORY offers them in presenting their catalog data before all leading buying factors in all segments of this field.

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A LIMITED NUMBER OF ADVERTISING PAGES

In the first annual edition is being made available to manufacturers and processors. Write for advertising rates . . . and other specifications . . . or consult your Advertising Agency.

Published by
INSTITUTIONS Magazine



Mort-o-Mist



**THE AEROSOL BOMB
WITH A
PUNCH**



Formula:

3% D. D. T.
2% Pyrethrum Extract 200-1
(.4% Pyrethrins)
15% Solvents
80% Freon

Contains 1 Pint, enough to treat 200 average size rooms.

Sold to jobbers and distributors at a price which affords a large margin of profit all the way down the line!

Supplied with buyer's own label if purchased in sufficient quantities.

Write our office nearest you for prices and other details.

HI-TOX, MORTICIDE and SUPER-MORTICIDE are now obtainable with D. D. T. added—BUT NO HIGHER PRICES.

D. D. T. Solutions with from 5% to 50% D. D. T.

D. D. T. Powders with from 10% to 50% D. D. T.

MORTOLIN—The ideal concentrate for Moth-proofing Compounds.

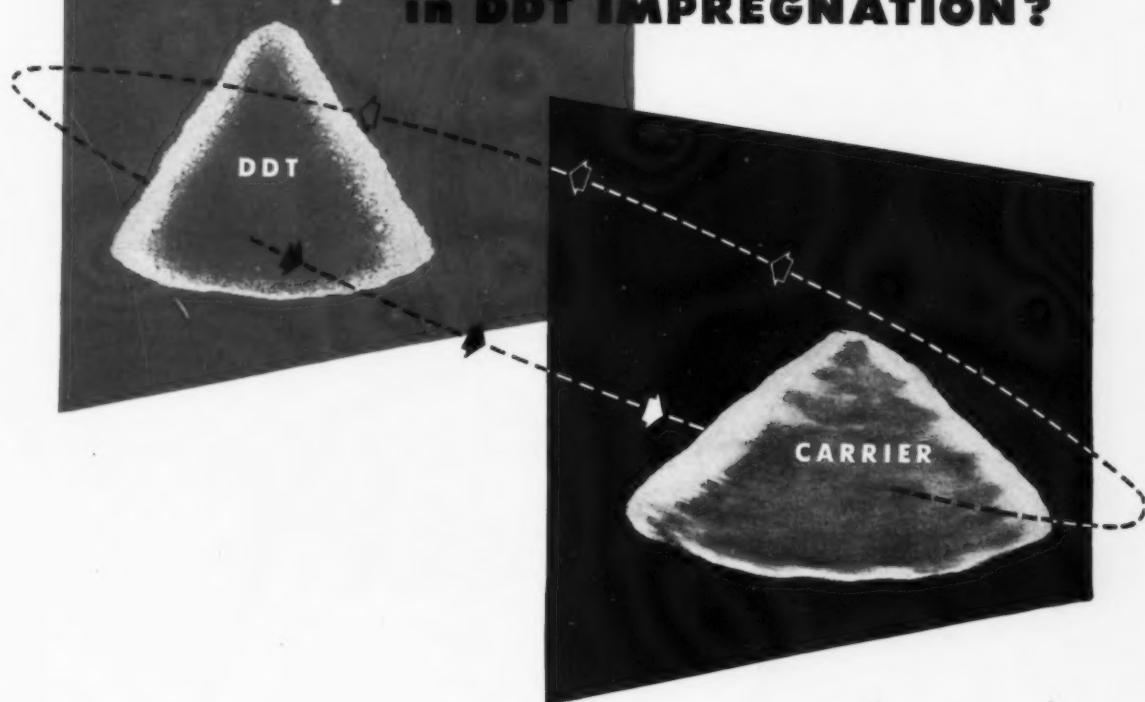
Associated Chemists, Inc.



1906 N. HALSTED STREET
CHICAGO 14, ILLINOIS

EASTERN OFFICE: Velsor Wright Company, 8 West 40th St., New York 18, N. Y.
TEXAS OFFICE: The Carroll Company, 1323 Wall Street, Dallas, Texas

Do **YOU** have problems in **DDT IMPREGNATION?**



The wax-like nature and tendency toward fusion exhibited by DDT present problems in the preparation and compounding of insecticidal powders and dusts. The finished mixture must retain required flowability—the grinding process simplified. Attaclay, the new, porous, finely divided insecticide carrier and diluent, has properties helpful in overcoming these mixing problems.

Over the range of concentrations currently in use commercially, ATTACLAY-DDT mixtures exhibit high flowability. Furthermore, the

adoption of Attaclay as carrier and diluent in DDT mixtures always minimizes grinding problems.

Because of its chemical compatibility, Attaclay helps maintain high toxicity in DDT mixtures.

Whether your process involves use of DDT or other insecticides, Attaclay's unique properties as a carrier and diluent merit consideration. We shall be pleased to send an adequate sample for testing. Just write to

ATTAPULGUS CLAY COMPANY

DEPT. N • 260 SOUTH BROAD STREET • PHILADELPHIA 1, PA.

*Disinfectant
Manufacturers
...investigate
"cationic germicides"*

Cationic germicides are chemistry's contribution to better PUBLIC HEALTH. Progressive disinfectant manufacturers are profitably marketing Cationic Germicides.

Onyx Cationic Germicides are the result of many years of intensive research, and have been tried, tested, and successfully used by our armed forces.

Onyx offers ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE 50% suitable for dilution by disinfectant manufacturers.

Onyx ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE is
... Odorless ... Colorless ...
Chemically and Bacteriologically
controlled ... Phenol Coefficient
E. typhosa—125.

ONYX invites your investigation. Write on company stationery for:

- Sample
- Technical Data Sheets
- Toxicity Studies



ONYX OIL & CHEMICAL COMPANY

Industrial Division

15 Exchange Place, Jersey City 2, N. J.

Add up these
Pyrethrum Economies

QUICK KILL
ODORLESS
+ SAFE TO USE
TIME-TESTED
NON POISONOUS
PYRETHRUM

IN AN insecticide base the original cost is important but of even more importance are the resultant economies in the performance of the insecticide itself.

When you consider that only 3% Pyrethrum is required with DDT to control a long list of pests, you begin to realize the initial cost has a minor bearing on the worth of your insecticide both to you and the ultimate user.

Pyrethrum, competitively priced with most synthetics, is still the best toxic ingredient for non-poisonous insecticides. Investigate Prentiss Clarified Pyrethrum Concentrate No. 20. This time-tested, *natural* insecticide base is guaranteed to contain 2.0 grams Pyrethrins per 100 c.c., is shipped in 55 gallon drums, and is available in an odorless base.

R. J. PRENTISS & COMPANY, INC.
110 WILLIAM STREET, NEW YORK 7, N. Y.
Plants: Brooklyn, New York and Newark, N. J.

PRENTISS

**CLARIFIED PYRETHRUM
CONCENTRATE No. 20**

★ *Over a third of a century devoted to Disinfectant
Research for the betterment of mankind . . .*

BAIRD & McGUIRE, Inc.

St. Louis, Mo.

Holbrook, Mass.

STOCK DIPS

DISINFECTANTS

INSECTICIDES

DDT

Crude Carbolic Acid

**TANK CARS
CAR LOADS • DRUMS**

**TO MANUFACTURERS
DISTRIBUTORS ONLY**



SANITARY PRODUCTS

A SECTION OF SOAP

MANY thousands of gallons of government surplus liquid household insecticide are being peddled around the country, but according to reports are not meeting with too great a sales success. However, the fact that this material is available in hands outside of the insecticide industry,—among dealers in surplus government materials who have no interest in insecticides except to turn a quick dollar,—is in itself a dangerous situation as far as the regular market for standard civilian products is concerned. In view of the fact that an insecticide of the type offered will stand up in storage for long periods, it is difficult to understand why the government has dumped it into the laps of speculators who care not what effect it has on the market as long as they can sell at a profit. After all the talk about protecting industry in the liquidation of war surpluses, any such "protection" thus far seems conspicuous by its absence.



ON THE program for the thirty-second annual summer meeting of the National Association of Insecticide & Disinfectant Manufacturers to be held in June at French Lick, Indiana, is listed an open forum at which questions to be submitted in advance by members of the industry will be answered by experts. If we may judge from talk in and about the industry, the number of unanswered questions in the minds of manufacturers and others run into high numbers. This looks like a chance to get the answers,—if there are answers. At any rate, if all the problems of

the industry brought forth submitted questions for answer, the meeting could last three weeks instead of three days. Nevertheless, the open forum idea has always proved effective in unearthing helpful information,—also at times some hot debates.



ALL is not serene within the sacred portals of the Federal Trade Commission. For years, it has split legal hairs with quiet dignity. But the peace of yesteryear has fled, all on account of a beer bottle label. Insinuations and name-calling have raised their ugly heads. For it seems that the Commission voted that American-made beer could be labeled "Canadian Beer,"—but with explanations of course. The magnitude of the problem involved in settling this question, especially its bearing on present world chaos and its importance to the starving millions of Europe and Asia, brought explosive repercussions, even to the Chairman of FTC denying an "unbridled, intemperate wielding of power."

In view of the fact that this latest earthshaking ruling of FTC is a reversal of a previous decision, we wonder what they are likely to do next. Offhand, it looks to us like the injection of some plain horse sense into the heretofore legal boondoggling in which FTC has always seemed to specialize. But one can never tell,—and if we were a manufacturer of English muffins, Chinese checkers, or French milled soap, we would keep a weather eye on their next move. Heaven only knows what it may be!

NEW FUNGICIDE

**Propionate-propionic acid product
proves effective in control of ath-
lete's foot and other fungus diseases**

By Frank Owens

Wyeth, Inc.

ATHLETE'S foot, the most common fungus disease, is estimated to affect from 75 to 90 per cent of certain population groups. In a recent countrywide industrial survey it was shown that during the hot season 80 per cent of workers had fungus infections of the feet (*tinea pedis*). There has been a crying need, therefore, for a specific fungus inhibitor that would be safe and effective.

A new propionate-propionic acid product manufactured by Wyeth Inc., Philadelphia, and being marketed under the trade name "Sopronol*" has just been released to the medical profession and drug trade after serving a therapeutic apprenticeship of several years. It is believed to represent an important addition to the list of fungistatic materials.

The fungistatic properties of this new material have been demonstrated on a test basis in the laboratory, and, clinically, against many of the more common and some of the rare fungus diseases. Moreover, there is not a single clinical record of primary or allergic reaction from its use. For one thing, propionic acid is a natural component of human perspiration (it is its presence that helps the skin repel both fungus and bacterial invaders), and for another the safety

of the product is attested by the fact that propionic acid is a natural by-product of Swiss cheese and is present in it, and is also used in large quantities as a mold retarding agent for cheese, butter and bread.

The antimicrobial action of propionic acid was established by pursuing two avenues of investigation: a routine examination of the antiseptic action of a whole series of fatty acids, of which propionic acid is a member—and by a line of research which started off with an academic inquiry into the acidity of the skin. That strong acids would kill micro-organisms was to be expected. However, the criterion for an effective antimicrobial agent is its ability to eliminate the micro-organisms without injuring their plant or animal host. Compared with the strong acids, such as sulfuric and hydrochloric, propionic acid and related fatty acids are mild and, in suitable dilution, closely approximate the acidity of the skin.

The first systematic examination of the bactericidal value of fatty acids was made by W. F. Bruce and reported in the *Journal of the American Chemical Society*. Examining fatty acids containing from one to four carbon atoms, Bruce found that those with an odd number of carbon atoms, including propionic which has three, were bacteriostatic, while the

even-numbered acids—acetic, butyric and isobutyric—do not interfere with bacterial growth.

Then, in 1928 and 1929, S. M. Peck and H. Rosenfeld, whose interest in the constituents of human perspiration had been attracted by the idea that it might act as a protective coating against parasitic and fungus infections, collected large quantities of sweat, analyzed them chemically and tested the anti-mold properties of the natural sweat, concentrated sweat and an artificial reproduction of sweat based upon its chemical analysis.

Peck and Rosenfeld grew *Trichophyton gypsum*, one of the fungi responsible for athlete's foot, in a suitable medium (Sabouraud's bouillon) and found that it would grow in media of the most divergent pH. They also found that the fungicidal and fungistatic effects of fatty acids and their salts were not due to their pH values but to their intrinsic anti-mycotic properties. Then testing the individual fatty acids, Peck and Rosenfeld found that propionic acid totally inhibited growth of typical fungi at a concentration of 0.03 per cent, a solution which gives a pH of 5.0 in Sabouraud's bouillon.

When Peck presented his findings, which tended to show that the more abundantly a person perspired the more fungicidal should be the skin, he was asked to explain the apparent contradiction inherent in the clinical observation that fungus diseases appear most often in areas where the most perspiration gathers, such as between the toes. In reply, Peck differentiated between the so-called insensible perspiration, which contains practically nothing but water and a little salt, and true perspiration which is produced by the sweat glands. The insensible, or water perspiration, he pointed out, was present between the toes and in other areas where it provides ideal conditions for fungus infection. In contrast, areas which are bathed by true sweat, if it is not too dilute, actually are protected from parasitic infection. In a subsequent paper, Peck proved that sweat, when concentrated by evaporation, definitely inhibited *T. gypsum*, one of the causative agents of athlete's foot. Sweat in 1 per cent concentra-

* See page 143 for composition of the three forms in which the product is available.

tion produced no inhibition; at 2 per cent concentration there was 60 per cent inhibition; 3 per cent allowed moderate surface growth; while 6 per cent completely inhibited growth. Chemical analysis of the sweat showed it to contain 0.0091 per cent propionic acid and 0.0377 per cent caprylic acid, among other ingredients. Artificial sweat based on this analysis, with a pH of 3.37, therefore, they concluded, would inhibit growth of *T. gypsum*.

A series of patients were then treated with mixtures of sodium propionate in various vehicles. It was found that alcoholic solutions of sodium propionate (10 per cent) and sodium propionate in talc (15 per cent strength) gave a satisfactory result in acute inflammatory lesions, whereas a suspension of sodium propionate 15 per cent in a fatty base gave better results when the lesions were primarily scaly or eczematoid.

But it was not until 1943 that E. L. Keeney published the definite laboratory study on the subject under the title, "The Fungistatic and Fungicidal Effect of Sodium Propionate on Common Pathogens". He found that sodium propionate in solutions of various strength, ranging from 0.0125 per cent to 2 per cent, adjusted to a pH of 5.5, was fungistatic for a host of fungus infections of the skin—including, of course, athlete's foot, ringworm of the scalp, barber's itch, jock-strap itch—and numerous other common infections of the skin, hair and nails.

Enlarging upon this, Keeney tested an entire series of fatty acids in the test tube against a representative number of micro-organisms. It was found that while sodium propionate at pH 5.5 compared favorably with the sodium salts of other fatty acids, in a number of instances stronger concen-

trations were necessary to kill fungi with sodium propionate than with other salts. On the other hand again, sodium propionate proved relatively less toxic than some of the other fatty acid salts, as shown by the table below.

In 1944, Keeney and his associates narrowed their bacteriological studies to the two most promising fungicidal fatty acids, propionic and undecylenic, comparing them to the standard fungicidal and bactericidal compounds popularly used in the treatment of mycotic infections such as athlete's foot. Using an agar cup-plate technique with the extra-resistant pathologic fungus *T. mentagrophytes* Dr. Keeney and his co-workers found that propionate-propionic acid excelled all other materials tested, not only as a fungicide but also as a bactericide, as shown by the following table: (See Page 128).

The Comparative Toxic Effect of Fatty Acid Salts on Mice
(Keeney, E. L., Ajello, L. and Lankford, E.: Studies on Common Pathogenic Fungi and on Actinomyces Bovis, Bull. Johns Hopkins Hospital, 75: 377-392, Dec., 1944)

Compound	No. Mice	Daily Intra-peritoneal dose	DEATH-DAYS OF INJECTION																								Survivals	
			1	2	3	4	5	6	7	8	9	10	11	13	16	18	20	24	27	28	30	60	90	No.	%			
Sodium propionate	5	mg. 5																							5	100		
	10	5																							10	100		
	5	10		2		2			1																0	0		
	10	15		6	1	1		2																	0	0		
Sodium valerate	5	1																							5	100		
	5	5																							5	100		
	5	10																							5	100		
	5	15																							5	100		
	5	25																							5	100		
	5	50	1	1									1												2	40		
Sodium caproate	5	1																							5	100		
	10	5																							10	100		
	10	10																						4	6	80		
	10	15																						2	8	80		
	10	25																							10	100		
	10	50																							10	100		
Sodium caprylate	5	1																							5	100		
	10	5																							10	100		
	10	10		1	1	1	3	1	2			1													0	0		
	10	15		1	2	6	1																		0	0		
Sodium caprate	5	1										1													4	80		
	10	5									1				1	2	1	1	1						2	20		
	10	10		1	3	5	1																		0	0		
	10	15		6	2		1	1																	0	0		
Sodium undecylenate	5	1																							5	100		
	10	5							3											1	1	3			2	20		
	10	10		4		2	4																		0	0		
	10	15	1	1	1	4	2			1															0	0		

Table Demonstrating the Fungistatic and Antibacterial Effects of Various Ointments in Vitro, by the Agar Cup-Plate Technique

(Keeney, E. L., Ajello, L., Broyles, E. N. and Lankford, E.: Propionate and Undecylenate Ointments in the Treatment of *Tinea Pedis* and an In Vitro Comparison of Their Fungistatic and Antibacterial Effects With Other Ointments, Bull. Johns Hopkins Hospital, 75: 417-439, Dec., 1944.)

	pH	Zone of Inhibition For		
		<i>T. mentagrophytes</i> after 96 hrs.	<i>Staphylococcus aureus</i> after 48 hrs.	<i>B. Hemistrep</i> after 24 hrs.
Propionate-propionic acid	5.5	Cm	Cm	Cm
Undecylenate-undecylenic acid 10%	5.5	6.5	2.5	2.8
Undecylenate-undecylenic acid 5%	6.5	6.0	1.6	2.4
Whitfield's—full strength	3.5	5.3	1.8	2.2
Whitfield's—one-half strength	4.0	3.7	1.4	2.3
Ammoniated mercury 10%	5.5	3.5	1.2	1.9
Sulfathiazole 5%	5.5	3.3	2.2	1.9
		2.8	3.0	2.1
Tyrosine 0.5%	6.0	(partial)	(partial)	1.0

Keeney and his associates also demonstrated, by in vitro experiments, that the propionate ointment was as effective as penicillin against beta hemolytic streptococcus. The much lesser effectiveness of Whitfield's ointment and ammoniated mercury, which have been among the fungicidal standbys of the past, is very obvious from the above chart. Additional clinical tests conducted by Keeney and associates established further the effectiveness of the propionate-propionic acid product as follows:

One hundred and twenty midshipmen of the United States Naval Academy with clinical evidence of *tinea pedis* (athlete's foot) formed the basis for a comparison between the propionate-propionic acid ointment and undecylenate-undecylenic acid ointment. After one week's treatment, 34 per cent of the men treated with the propionate product were clear of athlete's foot except for scaling while 63 per cent were clear after three weeks.

In the undecylenic group, 25 per cent were clear after one week's treatment and 33 per cent after three weeks (except for scaling). The scaling was disregarded as not necessarily a criterion of infection. When the treatment was long continued, there was apt to be a "backsliding" due to carelessness of the men in following instructions.

A MORE complete clinical study in the treatment of fungus infections of the skin was conducted by Keeney and Broyles in 1943. This study specifically considered seven of the most common mycoses: *Tinea pedis* (athlete's foot), *Tinea cruris* (jock strap itch), *Tinea glabrosa* (fungus infection of the un-haired skin), *Otomyco-sis* (fungus infection of the ear canal), *Thrush* (a fungus infection of the mouth in an infant), *Tinea capitis* (ringworm of the scalp) and one resistant case of *cutaneous actinomycosis*. The results of treatment were measured both by clinical condition and by the

presence or absence of organisms as demonstrated by cultures made from scrapings of the affected parts.

1. *Tinea pedis* (Athlete's foot): Fifty-five midshipmen were treated for athlete's foot. The degree of infection varied from minor to advanced. The feet were washed each night with soap and water and then dried thoroughly. The propionate ointment was rubbed well into the skin between the toes and the soles of the feet. The following morning the feet were washed again and, after drying, propionate powder was dusted between the toes and the soles of the feet. The table below shows the clinical effects:

Summary

In the group of minimal lesions, all the slides of fungus material were negative and all cultures sterile after four weeks of treatment.

In the minimal group 9 per cent were clear after two weeks' treatment, 50 per cent were clear after four weeks, 82 per cent after eight weeks and 100 per cent after sixteen weeks.

In the group of moderately advanced lesions after four weeks of treatment, two cases persisted in showing positive slides and from one a culture of *T. Purpureum* could still be obtained.

In the moderately advanced group, 11 per cent were clear and 68 per cent were improved after two weeks' treatment, 59 per cent were improved and 24 per cent were clear after four weeks, 11 per cent were improved and 72 per cent were clear after eight weeks, 77 per cent were clear and 15 per cent unchanged after twelve weeks and 8 per cent recurred and 94

Effectiveness of Propionate Ointment and Powder in the Treatment of Athlete's Foot
(Keeney, E. L. and Broyles, E. N.: Sodium Propionate in the Treatment of Superficial Fungous Infections, Bull. Johns Hopkins Hospital, 73: 479-497, Dec., 1943)

No. of Cases	Types of Cases	After 2 wks. ^a Treatment						After 4 wks. ^a Treatment						After 8 wks. ^a Treatment						After 12 wks. ^a Treatment					
		No. Ca.	W	Cond. in %		C	R	No. Ca.	W	Cond. in %		C	R	No. Ca.	W	Cond. in %		C	R	No. Ca.	W	Cond. in %		C	R
17	Minimal ..	13	0	8	84	8	0	10	0	0	50	50	0	15	0	0	18	82	0	10	0	0	10	70	20
22	Mod. Advan.	19	5	16	68	11	0	17	0	0	59	24	17	17	0	0	11	72	17	13	0	15	0	77	8
16	Advan.	13	7	8	54	31	0	10	0	0	56	44	0	11	0	0	10	90	0	9	0	0	0	78	22
W—Worse		S—Same		I—Improved		C—Clear		R—Recurred																	

W—Worse S—Same I—Improved C—Clear R—Recurred

per cent were clear after sixteen weeks.

In the group with advanced lesions after four weeks of treatment, one case persisted in showing a positive slide for fungus material and a culture of *T. Purpureum*. There were further improvements after eight, twelve and sixteen weeks. After sixteen weeks, the men became careless in following the routine of treatment, so that some recurrences were noted.

In the advanced group after two weeks 54 per cent were improved and 31 per cent were clear; after four weeks 56 per cent were improved and 44 per cent were clear; after eight weeks 10 per cent were improved and 90 per cent were clear, after twelve weeks, 78 per cent were clear and 22 per cent recurred. After sixteen weeks, there were some recurrences due to carelessness in following routine.

After twenty weeks of treatment, one positive slide for fungus material was obtained in each of the groups and only one positive culture was obtained.

2. *Tinea cruris* (Jock-strap itch): Twenty-three midshipmen were treated for twelve weeks. Cultures of *Epidermophyton inguinale* were obtained from 9 out of 13 cases. The propionate ointment (10 per cent sodium propionate) was rubbed into the affected areas of the skin every night. In the morning, the ointment was removed and the affected parts dusted liberally with powder (sodium propionate). Activities and wearing apparel were not limited.

Summary

After two weeks' treatment, 35 per cent were cured, 59 per cent were improved and five per cent were unchanged.

After four weeks' treatment 69 per cent were cured and 9 per cent were the same.

After eight weeks, 77 per cent were cured, 14 per cent were improved and 4.5 per cent were unchanged or had recurred. In every case of recurrence, the patient failed to observe the scheme of treatment.

After twelve weeks of treatment, 91 per cent of the cases were cured and the remaining 9 cases showed only a slight trace of the infection.

Cultures were negative except in three patients after four weeks of treatment.

After eight to twelve weeks' treatment, all slides were negative and all cultures sterile.

3. *Otomycosis* (Fungus infection of the ear canal): Two patients with otomycosis who had been treated unsuccessfully at Johns Hopkins with thymol, cresatin and 2 per cent salicylic acid in 90 per cent alcohol had their infections inhibited completely by a 1.25 per cent solution of sodium propionate adjusted at pH 5.5. Three times each week, the external auditory canals were cleaned and then swabbed with 10 per cent aqueous solution of sodium propionate adjusted at pH 5.5. In addition a case of otomycosis due to *Aspergillus niger* was treated with sodium propionate. Cultures became sterile but the condition of the eczema remained unaltered.

4. *Thrush* (Fungus infection of the mouth in an infant): A case of thrush in a three months old infant due to *Monilia albicans* was treated with 20 per cent aqueous solution of sodium propionate adjusted at pH 7.0. The infant was well after seven days of treatment and cultures were sterile.

5. *Tinea glabrosa* (Fungus infection of the unbaired skin): Two patients with *tinea glabrosa* were treated in part by sodium propionate and by tincture of iodine. Although the lesions treated with tincture of iodine improved more rapidly, this medicament made the skin dry and irritated, while the skin treated with sodium propionate was normal. After three weeks of treatment, "Sopronol" ointment was found superior and substituted for the iodine treatment. Cultures taken from lesions were sterile after four weeks.

6. *Audouini Infection*: A case of fungus infection by *Microsporum audouini* was treated three times daily with sodium propionate ointment (right cheek). After five days of treatment, the lesion had disappeared.

7. *Tinea capitis* (Ringworm of the scalp): Three cases of *tinea capitis* due to *Microsporum audouini* were treated with sodium propionate ointment. After seven weeks, 2 of 3 children were reported to be free of lesions. The third child was not improved.

8. *Actinomycosis*: A patient with actinomycosis of the tongue was treated by dusting pure sodium propionate powder under the under surface of the tongue three times daily. The growth which had resisted all other treatment disappeared in two weeks and did not recur within six months. In none of 376 patients was there any evidence of irritation or allergy.

The propionate solution or ointment is applied directly to the areas affected in sufficient amount to make contact with all infected surfaces. Daily bathing of the affected parts together with additional therapeutic treatments (permanganate or liquor cresolis soak) may be indicated at the discretion of the physician. The use of keratolytics such as Whitfield's ointment may be considered at the start of treatment to expedite contact of the fungicide with the infected surface by removal of scales and debris. Mechanical debridement and surgical opening of visicles may also be a necessary adjunct to effective treatment.

After thorough drying of parts, the powder may be dusted on where
(Turn to Page 143)

After 16 wks. Treatment						After 20 wks. Treatment					
No. Ca.	W	Cond. in %		C	R	No. Ca.	W	Cond. in %		C	R
		S	I					S	I		
12	0	0	0	100	0	8	0	0	0	88	12
17	0	6	0	94	0	14	0	0	0	79	21
10	0	0	30	70	0	8	0	0	0	75	25

AN Announcement

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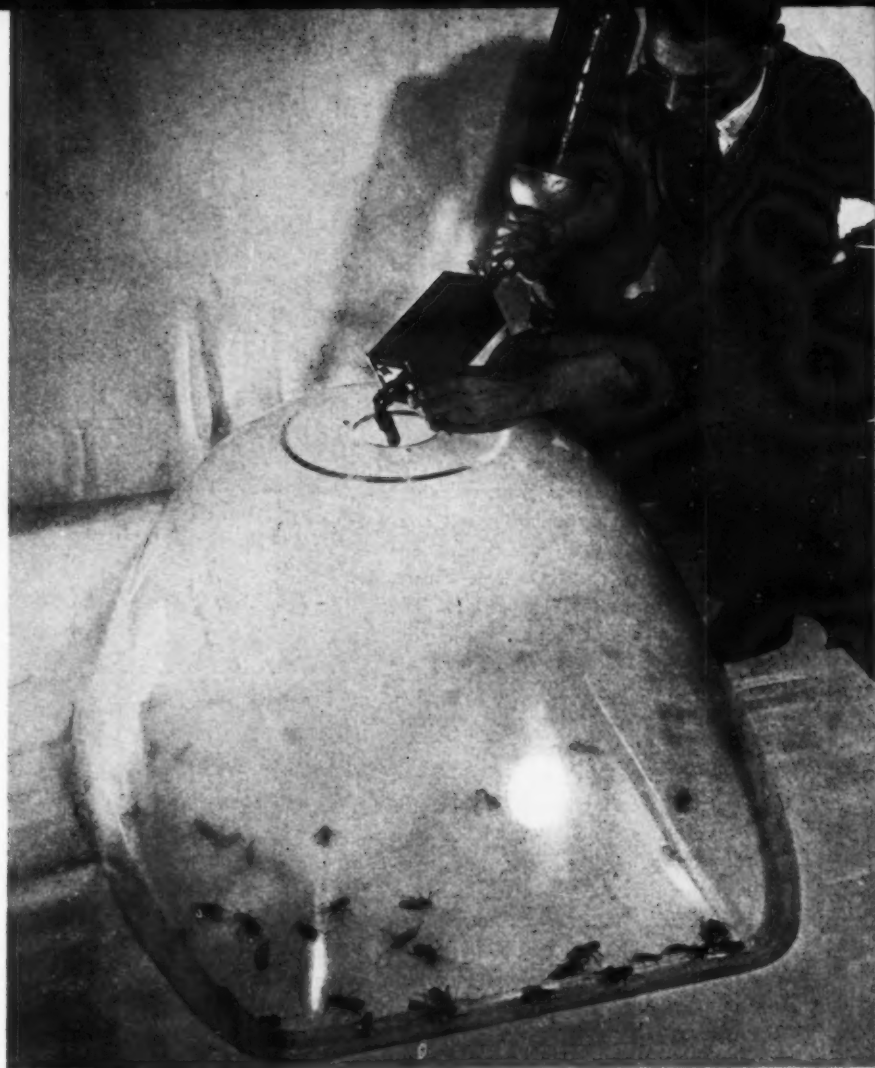
ROACH POWDER

DDT formula improved by the addition of "Lethane A-70" to improve knockdown. A discussion of combination roach powders

BY

R. B. Schwitzgebel

Rohm & Haas Co.



DURING 1944 a new organic thiocyanate, "Lethane A-70", (90 per cent beta, beta, di-thiocyanodiethylether) was introduced as a toxicant for "non-poisonous" roach powders. As reported in *Soap and Sanitary Chemicals* (May 1944), tests conducted by the manufacturer's research staff showed that its fast action and killing power equalled results obtained with pyrethrum and were superior to sodium fluoride. This new product received wide acceptance, especially in the small-package field, as shown by the fact that enough has been marketed to make several million pounds of finished roach powder.

When DDT became available during the latter part of 1945, it was incorporated in many roach powder formulas. Field tests have demonstrated that 10 percent DDT roach

powder is effective but slow in action. The Cooperative Research Committee of the National Pest Control Association observed in their Third Progress Report that "DDT powder requires an added paralyzant so that a quicker knockdown of crawling insects, such as roaches, may be had." (*Soap and Sanitary Chemicals*, November 1945). The addition of "Lethane A-70" to roach powders based on DDT has been found to provide such a paralyzant. In a series of experiments, several formulas with combinations of "Lethane A-70" and DDT proved to be faster in action and more effective than 10 per cent DDT roach powders.

In these tests 10 per cent "Lethane A-70" and 10 per cent DDT were compared directly and with several combinations of the two materials. "Dicalite IG₂", one of the diato-

Testing insecticides against roaches. The aerosol is being released within a "Plexiglas" enclosure. Photo, courtesy of Rohm & Haas Company.

maceous earths, was used as the diluent in all the roach powder formulas tested during these studies. This material was found to have adequate bulk, good adhesive qualities, and no effect on the chemical stability of the toxicants. Additional unpublished data indicate that other diatomaceous earths, such as certain "Celites," are equally as good as the "Dicalites" as diluents for this type of roach powder.

Both American and German adult male roaches were used in these experiments. The rearing technique for the German species was designed to provide large numbers of adults of

the same age for each series of tests. Evaluation of the various roach powder formulas was made in two ways: the tower method and the tray method. The dusting towers which were employed to study the lethal effectiveness of the powders have been described previously (*Soap*, May 1944). The tower technique is widely used and permits reasonable accuracy in applying a uniform amount of powder to each test insect.

To study the comparative speed of action of the several formulas, the tray method was used. This technique was designed to simulate roach control under practical conditions. The wooden trays are three feet square, with glass sides three inches high. The floor of each tray is lined with clean bogus paper and a measured amount of roach powder sifted lightly on this lining. The treated portion approximates a circular area 12 inches in diameter in the center of the tray. Roaches were released within the treated area and allowed to pass through the powder. The rate of mortality effected by the several formulas was determined by counting the number of dead and moribund roaches in each tray at various intervals during the subsequent 24 hours.

Summaries of data obtained by the tower method are presented in Tables I and II. Data in Table I indicate that 10 per cent "Lethane A-70" effected roach mortality equal to 10 per cent DDT, whereas a combination of 5 per cent "Lethane A-70" and 5 per cent DDT was superior to both 10 per cent DDT and 10 per cent "Lethane A-70". The effect of adding various amounts of "Lethane A-70" to 10 per cent DDT is shown in Table II. A low dosage was used in this series of tests so that the results obtained with the several formulas might be clearly defined. These data show that the addition of as little as 2.5 per cent "Lethane A-70" to 10 per cent DDT substantially increases the effectiveness of the formula as compared to a 10 per cent DDT roach powder.

The roach powder formulae used in the tower tests were also subjected to a series of tests by the tray method, in order to obtain a critical

TABLE I—ROACH MORTALITY DATA

Test Procedure—tower method
Test insect—adult male German Roach (*Blattella germanica*)
Dosage: 175 mg.

Formula	No. Roaches Tested	Percent Mortality 48 hours after treatment
10% "Lethane A-70"	240	66
10% DDT	240	64
5% "Lethane A-70"—5% DDT	240	83

TABLE II—ROACH MORTALITY DATA

Test Procedure—tower method
Test insect—adult male German roach
Dosage: 100 mg.

Formula	No. Roaches Tested	Percent Mortality 48 hours after treatment
10% DDT	120	30
10% DDT+2.5% "Lethane A-70"	120	74
10% DDT+ 5% "Lethane A-70"	120	82
10% DDT+7.5% "Lethane A-70"	120	79

TABLE III—ROACH TIME MORTALITY DATA

Test procedure—tray method
Test insect—adult male German roach
Dosage: 250 mg.
100 roaches per test—6 replicates with each formula

Formula	Percentage mortality (dead and moribund) Exposure period (hours)			
	2	4	8	24
10% "Lethane A-70"	42	60	71	81
5% "Lethane A-70"+5% DDT	8	29	52	65
10% DDT	2	4	9	54

evaluation of the comparative speed of action of the various combinations. This study was more extensive than the tower test and involved the use of approximately forty-five hundred German and American roaches. Results of these tests, which are presented in Tables III, IV, V and VI clearly demonstrate the fast action of "Lethane A-70" as compared with DDT. A comparatively small amount of roach powder (250 mg.) was used in this series of tests so that the rate of mortality could be studied during a twenty-four-hour period.

It may be noted in Table III above that a 50 per cent mortality of German roaches was obtained in less than four hours with 10 per cent A-70; in eight hours with 5 per cent A-70 plus 5 per cent DDT; and in twenty-four hours with 10 per cent DDT. Another series of tray tests was conducted, comparing 10 per cent

DDT with three other formulas in which varying amounts of "Lethane A-70" were added to the DDT. In these tests a record was made of the dead and moribund roaches at intervals of one-half, one, two, four, eight, and twenty-four hours after the insects were introduced into the treated trays. Results of these tests are reported in Table IV. These data show that the rate of roach mortality varied directly with the amount of "Lethane A-70" in the formula. This fact was further substantiated with data obtained in tray tests with American roaches with a similar set of roach powders (Table V).

In another set of tray tests the dosage was increased to 500 mgs., in order to demonstrate the fast action of "Lethane A-70" as it would be likely to occur under conditions of actual use. It may be noted in Table VI that 94 per cent of the roaches were

TABLE IV—ROACH TIME MORTALITY DATA

Test procedure—tray method

Test insect—adult male German roach

Dosage: 250 mg.

One hundred roaches per test—3 replicates with each formula

Formula	Exposure period (hours)	Percentage Mortality (dead and moribund)					
		½	1	2	4	8	24
10% DDT		0	0	0	4	20	72
10% DDT+2.5% "Lethane A-70"		1	3	9	33	49	99
10% DDT+ 5% "Lethane A-70"		1	3	9	46	73	95
10% DDT+7.5% "Lethane A-70"		2	9	13	40	75	100
10% "Lethane A-70"		6	18	26	57	89	96

TABLE V—ROACH TIME MORTALITY DATA

Test Procedure—tray method

Test insect—adult male American roaches (*periplaneta americana*)

Dosage: 1 gram

Formula	Exposure—Hours	Percentage Mortality (Dead and Moribund)			
		1	2	4	8
10% "Lethane A-70"		4	8	24	56
10% DDT		0	0	10	36
10% DDT plus 5% "Lethane A-70"		4	16	58	82
10% DDT plus 7.5% "Lethane A-70"		6	14	58	94

TABLE VI—ROACH TIME MORTALITY DATA

Test Procedure—tray method

Test insect—adult male German roach

Dosage: 500 mg.

Formula	Exposure... Period (minutes)	Percentage Mortality (Dead and Moribund)			
		15	30	45	60
10% DDT		0	0	0	0
10% DDT plus 5% "Lethane A-70"		12	31	58	94

paralyzed within one hour with the 5 per cent "Lethane A-70" 10 per cent DDT formula. During the same period 10 per cent DDT powder had no visible effect on the roaches.

The source of DDT in all tests involving this chemical was a dust containing 50 per cent by wt. DDT (technical, setting point 89° C. minimum) and 50 per cent pyrophyllite. The particle size of this dust was 90 per cent less than 5 microns mean diameter.

Toxicological tests have revealed another advantage of "Lethane A-70" as used in roach powders. It has a low order of toxicity to warm-blooded animals. Roach powders containing 10 per cent "Lethane A-70" as sole toxic agent are in terms of rough comparison about one-fifth as toxic as powders containing 5 per cent rotenone from derris or cube root. Such powders do not require a poison

label. When DDT is incorporated with "Lethane A-70" a suitable caution statement should be employed.

Summary

Roach powders based on DDT have proved effective in the field but are notably slow in action. The National Pest Control Association has reported that an added paralyzant is needed in the DDT formula to effect a quick knockdown for crawling insects. The fast action of "Lethane A-70" roach powder has become well known during the past two years. The potentialities of a roach powder formula involving both "Lethane A-70" and DDT prompted the initiation of an extensive series of tests to study the effectiveness and speed of action of combinations of these toxicants.

Results of tower tests with the German roach showed that the addition of as little as 2.5 per cent "Le-

thane A-70" to 10 per cent DDT substantially improved the formula. A combination of 5 per cent "Lethane A-70" and 5 per cent DDT was found to be superior to either toxicant when used alone at 10 per cent.

A critical analysis of the speed of action of several formulas was obtained by using the tray method. These tests demonstrated that the rate of roach mortality increased directly with the amount of "Lethane A-70" in the formula. Using a dosage to simulate field conditions, 94 per cent of the German roaches were paralyzed in sixty minutes with 5 per cent "Lethane A-70" plus 10 per cent DDT, while 10 per cent DDT alone produced no visible effects during the same period of time.

DDT in Controlling Fleas

DDT, when properly formulated, is very effective in controlling several species of fleas. DDT in aerosols will give only partial and temporary relief from flea infestations in the house. Dusts containing 10 per cent of DDT in diluents may be used directly on dogs and other animals, except cats, for controlling adult fleas. DDT in oil solutions and in emulsions is very effective against flea larvae, but should not be used on animals, because of the danger of burning them. Commercial dusts, solutions, emulsions, and suspensions containing DDT can be recommended for general use in and about buildings, in yards, and in other similar situations. H. H. Stage. U. S. Dept. Agr., Bur. Entomol. Plant Quarantine E-680, 4 pp. (1946).

Spraying Jungle Areas

Sprays containing 10 per cent DDT dispersed by airplane over jungle forest areas in the Panama Canal zone were highly effective against adult mosquitoes. Initial reductions of 98-100 per cent were obtained, but treated areas were reinfested in 21 days. Larvae of *Anopheles* sp. and *Culex* sp. were controlled by aerial spraying. Systematic spraying of large areas is a potent weapon in malaria control, especially under military conditions. A. W. Lindquist and W. C. McDuffie, *J. Econ. Entomol.* 38, 545-8.

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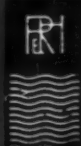
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AEROSOL FORMULATION



Laboratory Tests with Pyrethrum and DDT Aerosols Against the Common Malaria Mosquito and the Housefly*

*By Arthur W. Lindquist, B. V. Travis,
A. H. Madden, and Howard A. Jones*

Bureau of Entomology and Plant Quarantine U.S.D.A.

IN a preliminary paper (Lindquist *et al*, 1945), a summary was given of results obtained with liquefied-gas aerosols containing pyrethrum and DDT against the housefly, *Musca domestica* L., and the common malaria mosquito, *Anopheles quadrimaculatus* Say, under semipractical conditions. One of the chief objectives of this work was to incorporate DDT into an aerosol formula for the

purpose of conserving pyrethrum. The testing methods, which are described in the previous paper, consisted essentially in exposing the flies and mosquitoes to aerosols released from standard 1-pound containers in 4,800 or 9,300 cubic foot rooms by carrying the insects in cylindrical screen cages. The exposure period for mosquitoes was 1 minute and for houseflies 5 minutes. After exposure the insects were transferred to clean holding cages, fed and watered, and held at a constant temperature and humidity until the 24-hour mortality counts were made.

This paper presents in detail the results obtained in the major portion of these investigations.

Tests with Reduced Concentrations of Pyrethrins.—The aerosol formula used by the armed forces at the time these investigations were undertaken contained 0.8 per cent of pyrethrins (prepared from 20 per cent pyrethrum concentrate) and 6 per cent of sesame oil. Comparative tests were conducted with this formula and with another containing 0.4 per cent of pyrethrins and 8 per cent of sesame oil, which was being considered on the

* This work was conducted under a transfer of funds, recommended by the Committee on Medical Research, from the Office of Scientific Research and Development to the Bureau of Entomology and Plant Quarantine.

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basis of tests conducted by E. R. McGovran and L. D. Goodhue of this Bureau. Against mosquitoes the 0.4 per cent concentration in general was less effective at low dosages (1.61 mg. of pyrethrins per 1,000 cubic feet), but at higher dosages (12 mg. of pyrethrins per 1,000 cubic feet) there was no difference in effectiveness between the two formulas. Results against houseflies were not conclusive, owing to the relative ineffectiveness of pyrethrum aerosols against this insect.

It is concluded from these and subsequent tests that, at the recommended dosage of 3 grams of total aerosol (12 mg. of pyrethrins) per 1,000 cubic foot, 0.4 per cent of pyrethrins and 8 per cent of sesame oil may be used successfully to control the common malaria mosquito.

Tests with DDT Using Various Auxiliary Solvents.— Since dichlorodifluoromethane will dissolve only a slight amount of DDT, it is necessary to use an auxiliary solvent in preparing solutions of DDT in this gas. Obviously this solvent must not only dissolve a high percentage of DDT, but it must be soluble in dichlorodifluoromethane. It must also be nontoxic and non-irritating.

Preliminary tests indicated that at least 5 per cent of DDT was required in an aerosol to give results against mosquitoes comparable with those obtained with pyrethrum. Tests were therefore made to determine the relative effectiveness of 5 per cent DDT aerosols prepared with various auxiliary solvents. Before a more precise technique was developed, difficulty was encountered in obtaining uniform dosages of DDT. In these tests the average rate of application of DDT ranged from approximately 21 to 27 mg. per 1,000 cubic feet. The results are presented in table 1.

In all respects cyclohexanone proved to be the most satisfactory and effective auxiliary solvent for DDT. It will dissolve a high percentage of DDT, its odor is not unpleasant, and its use causes no discomfort. Its only disadvantage is that it is also a good solvent for lacquers and plastics, and some damage to such materials through careless use of aerosols containing 10 per

Table 1. Comparison of DDT aerosols containing various auxiliary solvents in tests against mosquitoes and houseflies. From 75 to 100 insects used in test with each aerosol solution.

Auxiliary Solvent ^a	Dosage of DDT Mg. per 1,000 cu. ft.	<i>Anopheles quadrimaculatus</i> Knockdown in				<i>Musca domestica</i> Knockdown in			
		Tests Num- ber	10 Mins. Per Cent	2 Hrs. Per Cent	Kill in 24 Hrs. Per Cent	Tests Num- ber	10 Mins. Per Cent	2 Hrs. Per Cent	Kill in 24 Hrs. Per Cent
Velsicol AR-60 ^b	20.3	7	1	16	47	..	..	..	..
Tetralin	21.0	4	3	..	40	4	0	..	96
Kopper's solvent (K-32 solution)	22.8	6	2	..	50	5	1	..	95
Dimethyl phthalate	21.9	4	3	33	62	4	0	1	72
Dibutyl phthalate	27.2	4	2	33	88	4	0	77	98
Benzyl benzoate	27.4	5	3	47	89	4	0	68	95
Dibutyl phthalate 5% cyclohexanone	22.1	9	1	61	77	3	0	60	100
5%	22.2	4	0	7	52	..	..	..	..
10%	24.4	19	2	28	62	18	0	30	98
15%	21.1	4	1	12	63	..	..	..	..

^a 10 per cent of auxiliary solvent was used except where otherwise indicated.

^b An alkyl naphthalene.

cent of this material has been reported.

Benzyl benzoate and dibutyl phthalate gave a higher kill than was obtained with cyclohexanone, but the average dosage was higher with these two materials. The low volatility of these solvents produces wetter droplets of the insecticide, which may also have contributed to higher mortality. However, benzyl benzoate produces an aerosol which is extremely irritating, whereas dibutyl phthalate dissolves such a low concentration of DDT that it cannot be considered promising from a practical standpoint.

Comparison of Various Dosages of the DDT-Cyclohexanone Aerosol.— Because of the favorable properties of cyclohexanone, a solution containing 5 per cent of DDT and 10 per cent of cyclohexanone in dichlorodifluoromethane was chosen as the basic DDT formula. This formula was therefore used to study the relative effectiveness of various dosages of DDT. The results are shown in table 2.

In the tests against mosquitoes there is an abrupt rise in mortality with a slight increase in dosage at the lower

dosages, but the mortality tends to level off as the higher dosages are approached. There are no records for the lowest dosage against houseflies, but the mortality approximates 100 per cent at a much lower dosage than in the case of mosquitoes. The 2-hour knockdown of houseflies increases proportionately with the increase in dosage.

Comparison of Pyrethrum and DDT Aerosols.—The effectiveness of an aerosol containing 5 per cent of DDT plus 10 per cent of cyclohexanone was compared with that of the pyrethrum aerosol containing 0.4 per cent of pyrethrins and 8 per cent of sesame oil. In these tests knockdown and kill were studied at three dosages of the aerosol solution—(1) the dosage recommended for practical application, which is approximately 3 grams of total solution per 1,000 cubic feet; (2) one-half the recommended dosage; and (3) a sublethal dosage, equivalent to one-eighth the recommended dosage. The results are summarized in table 3.

At the sublethal dosage the pyrethrum aerosol was somewhat more toxic than DDT to mosquitoes, and

Table 2. Effectiveness of various dosages of the 5 per cent DDT-10 per cent cyclohexanone aerosol against mosquitoes and houseflies. From 75 to 100 insects of each species used in each test.

Dosage of DDT Mg. per 1,000 cu. ft.	<i>Anopheles quadrimaculatus</i> Knockdown in				<i>Musca domestica</i> Knockdown in			
	Tests	10 Mins.	2 Hrs.	Kill in 24 Hrs.	10 Mins.	2 Hrs.	Kill in 24 Hrs.	
20	8	3	45	54
24	19	2	28	62	0	30	98	..
42	5	0	51	81	0	55	100	..
81	3	1	94	98	0	95	100	..

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Table 3. Comparison of the effectiveness against mosquitoes and houseflies of 0.4 per cent pyrethrum-8 per cent sesame oil and 5 per cent DDT-10 per cent cyclohexanone aerosols when applied at various dosages. From 75 to 100 insects were used in each test.

Aerosol and Dosage	Dosage of Active Ingredient	Tests	Anopheles quadrimaculatus		Musca domestica	
			Knockdown in	Kill in	Knockdown in	Kill in
	Mg. per 1,000 cu. ft.	Number	10 Mins.	2 Hrs.	10 Mins.	2 Hrs.
Sublethal:						
Pyrethrum-sesame oil . . .	1.7	14	60	83	79	..
DDT-cyclohexanone . . .	24.4	19	2	28	62	0
One-half recommended:						
Pyrethrum-sesame oil . . .	6.5	7	99	99.6	100	57
DDT-cyclohexanone . . .	85.25	8	7	92	98	5
Recommended:						
Pyrethrum-sesame oil . . .	11.9	9	99	100	100	88
DDT-cyclohexanone . . .	151.5	9	19	100	97	39

produced a much greater knockdown. As the dosage was increased the difference in kill of mosquitoes became less until at the recommended dosage 100 per cent mortality was obtained with both pyrethrum and DDT. The pyrethrum aerosol at all dosages gave a far superior knockdown rate, although at the highest dosage the 2-hour knockdown was 100 per cent with both the DDT and the pyrethrum aerosol.

Against flies the results differed greatly from those obtained against mosquitoes. The DDT aerosol gave from 98 to 100 per cent mortality of flies at all dosages, whereas the pyrethrum produced very little kill even at the highest dosage. The 10-minute knockdown was greater for the pyrethrum aerosol, but at the 2-hour reading pyrethrum-treated flies showed a high recovery whereas a large percentage of those exposed to DDT were knocked down.

These results were substantiated repeatedly in later tests in which the same two formulas were used as standards of comparison in testing other formulas. Thus it is apparent that at the higher dosages pyrethrum aerosols have the advantage over the 5 per cent DDT formula giving a much higher immediate knockdown of mosquitoes and a slightly greater 24-hour kill. On the other hand, the DDT aerosol is far more effective than pyrethrum against houseflies, although pyrethrum possesses superior knockdown properties.

Effect of Adding Pyrethrum to the DDT Aerosol.—Since DDT lacks the desirable knockdown properties inherent in pyrethrum, 0.2 per cent of

pyrethrins was added to the basic 5 per cent DDT formula. The results of tests comparing this combination with the newly adopted pyrethrum aerosol are presented in table 4. These records show that both the desirable knockdown properties of pyrethrum and the superior toxic action of DDT against houseflies are obtained by this formula with an appreciable saving in the amount of pyrethrins.

Effect of Adding Oils to Pyrethrum and DDT Aerosols.—Sesame oil was included in the original aerosol formula because it was believed to be an activator for the pyrethrins (Sullivan *et al*, 1942). The results of early tests comparing the effectiveness of an aerosol containing 0.4 per cent of pyrethrins, alone and in combination with sesame and other vegetable oils are presented in table 5. In this series methyl chloride was used as the carrier

gas, since some of the oils were not miscible with dichlorodifluoromethane. The use of methyl chloride is restricted as it is somewhat toxic to man. The aerosols were discharged from a special dispenser, described by McGovran *et al*, 1943, at the rate of 1.61 mg. of pyrethrins per 1,000 cubic feet.

Against mosquitoes the formulas containing soybean or peanut oil were just as effective as that containing sesame oil, and the formula containing corn oil was slightly more effective. With houseflies the usual low kills prevailed in all cases, but the corn oil combination gave the best results. The record obtained with pyrethrins alone shows that the oils increase the effectiveness of the pyrethrins to a marked extent.

Further tests comparing the effects of adding various oils, including sesame, to pyrethrum and DDT aerosols are summarized in table 6. In this series of tests it was found that either corn oil or motor oil was essentially as effective as sesame oil in the pyrethrum aerosol when used at a concentration of 8 per cent. When the concentration of motor oil was increased to 18 per cent, however, the effectiveness of the aerosol was decreased. In a series of tests in which formulas containing sesame and motor oil were compared at one-half the recommended dosage, an identical kill of 94 per cent was secured on mosquitoes. All the oils also increased the effectiveness of the DDT aerosol, although the increase was not

Table 4. Comparative effectiveness against mosquitoes and houseflies of the 5 per cent DDT-10 per cent cyclohexanone aerosol to which 0.2 per cent of pyrethrins were added and the regular pyrethrum aerosol. From 75 to 100 insects of each species used in each test.

Aerosol and Dosage	Aver. Dosage per 1,000 cu. ft. Pyrethrins DDT		Tests	Anopheles quadrimaculatus		Musca domestica	
	Mg.	Mg.		Knockdown in	Kill in	Knockdown in	Kill in
			Number	10 Mins.	2 Hrs.	10 Mins.	2 Hrs.
Sublethal:							
Pyrethrum-sesame oil	1.7	....	14	60	83	79	..
DDT-cyclohexanone plus pyrethrins	1.0	26.3	6	9	48	85	4
One-half recommended:							
Pyrethrum-sesame oil	5.6	....	10	99	100	100	10
DDT-cyclohexanone plus pyrethrins	3.2	75.0	9	77	99	100	9
Recommended:							
Pyrethrum-sesame oil	11.9	9	99	100	100	11
DDT-cyclohexanone plus pyrethrins	5.1	147.0	10	91	99	100	12

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These tests show that certain vegetable oils or motor oils may be substituted satisfactorily for sesame oil in the pyrethrum aerosol formula, and that the addition of such oils increases the effectiveness of DDT in aerosol form. Apparently the relationship between the oils and the insecticides is physical rather than chemical. It is possible that the oils may cause better contact with the insect. Since motor oil is just as effective as vegetable oils in this respect, its use would be more practical and economical.

Sex Resistance.—Since female mosquitoes are usually more resistant to insecticides than males, a series of tests were made using both DDT and pyrethrum formulas to determine whether the same relative resistance was exhibited toward aerosols by both sexes. The males were found to be less resistant, but in some cases, particularly with the standard pyrethrum and DDT formulas, the difference in mortality was very slight. No tests were made of the relative resistance of male and female houseflies to aerosols.

Aerosol Tests with Other Insecticides.—Since *Thanite* (isobornyl thiocyanacetate) and *Lethane 384 Special* (mixture of 3 parts of beta-thiocyanoethyl esters of aliphatic acids, and 1 part of beta-butoxy-beta-thiocyanodiethyl ether) have been used extensively in fly sprays in recent years, a number of tests were made with these insecticides in aerosols. *Thanite* alone at the high dosage rate of 300 mg. per 1,000 cubic feet gave a 94 per cent knockdown of mosquitoes, but the 24-hour kill was only 59 per cent. The knockdown of houseflies was 59 per cent, but the kill was only 46 per cent, or about that which would have been obtained with DDT alone. Against houseflies this combination gave only 9 per cent knockdown whereas the kill was only slightly greater than would have been obtained with DDT. *Lethane 384 Special* alone gave no knockdown and practically no kill of either mosquitoes or houseflies at the high dosage rate of 50 and 100 milligrams per 1,000 cubic feet. Furthermore, the addition of various concentrations of this mate-

Table 5. Comparative effectiveness against mosquitoes and houseflies of various vegetable oils in the pyrethrum aerosol (0.4 per cent pyrethrins). From 75 to 100 insects of each species use in each test.

Oil	<i>Anopheles quadrimaculatus</i> Knockdown in				<i>Musca domestica</i> Knockdown in			
	Tests	10 Mins.	2 Hrs.	Kill in 24 Hrs.	Tests	10 Mins.	2 Hrs.	Kill in 24 Hrs.
	Number	Per Cent	Per Cent	Per Cent	Number	Per Cent	Per Cent	Per Cent
None	3	30	72	48	1	2	0	2
Sesame	6	38	90	66	3	3	1	16
Soybean ¹	6	41	91	66	3	0	0	9
Peanut ¹	6	49	87	63	3	2	0	19
Corn ¹	6	61	86	73	3	1	0	22

¹ Refined grade.

rial did not increase the effectiveness of DDT. It is concluded, therefore, that when applied in aerosol form *Thanite* and *Lethane 384 Special* are not very effective against mosquitoes and houseflies.

Summary.—In laboratory studies to find substitutes or adjuvants for pyrethrum in aerosols promising results were obtained with DDT.

Since DDT is only slightly soluble in dichlorodifluoromethane, it was necessary to find an auxiliary solvent. Cyclohexanone was considered the best tested, from the viewpoint of availability, cost, odor, nonirritating properties, and nontoxicity to humans. Five per cent of DDT plus 10 per cent of cyclohexanone in an aerosol formula was found to cause a 24-hour mortality of *Anopheles quadrimaculatus* Say close to that obtained with a pyrethrum aerosol containing 0.4 per cent of pyrethrins and 8 per cent of sesame

oil, and was far superior to the pyrethrum aerosol against houseflies.

In comparison with pyrethrum, DDT gave slower knockdown of both mosquitoes and flies. In contrast, however, a large percentage of flies recover after exposure to pyrethrum while recovery seldom occurs after exposure to DDT. The recovery of mosquitoes from exposures to either DDT or pyrethrum is negligible.

In order to increase the speed of knockdown of the 5 per cent DDT formula, 0.2 per cent of pyrethrins was added. The combination proved to be highly effective against both mosquitoes and flies.

Tests with various vegetable and mineral oils as possible substitutes for sesame oil showed that corn oil and motor oils can be used effectively in the pyrethrum aerosol. The addition of motor oil also increases the effectiveness of DDT.

Table 6. Effectiveness against mosquitoes and houseflies of pyrethrum and DDT aerosols containing various oils. Aerosols discharged at the rate of 1.61 mg. of pyrethrins or 20 mg. of DDT per 1,000 cubic feet. From 75 to 100 insects of each species used in each test.

Oil Used	Tests	<i>Anopheles quadrimaculatus</i> Knockdown in			<i>Musca domestica</i> Knockdown in		
		10 Mins.	2 Hrs.	Kill in 24 Hrs.	10 Mins.	2 Hrs.	Kill in 24 Hrs.
	Number	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
Pyrethrum aerosols:							
Sesame oil 8%.....	15	62	89	71	7	0	12
Corn oil ¹ 8%.....	6	65	82	65	3	0	9
Motor oil ¹ { 8%.....	14	76	75	66	3	0	6
{ 18%.....	5	33	42	48	1	1	3
DDT aerosols:							
None	12	6	14	45	0	14	83
Sesame oil 5%.....	6	2	23	47	0	11	89
Corn oil ¹ 5%.....	6	5	32	54	0	21	94
Motor oil ¹ { 5%.....	12	4	36	64	2	22	92
{ 10%.....	6	10	21	60	0	34	93
{ 15%.....	6	14	23	67	0	28	92

¹ Technical grade.

² S.A.E. 70.

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Studies on the possible use of *Thanite* or *Lethane 384 Special*, either as a substitute for pyrethrum or in combination with DDT, showed that the large amount of these insecticides required for adequate knockdown or kill were not practical in an aerosol formula.

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ATHLETE'S FOOT

(From Page 129)

dry medication is desired. To prevent re-infection with athlete's foot, the powder should be used prophylactically in shoes, slippers and stockings.

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LECITHIN IN SOAP

(From Page 40)

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LINED SOAP DRUMS

(From Page 73)

of these new packages. To expedite the finding of suitable protective coatings to hold your product it is essential to submit a sample with information about the general chemical nature of the material, also the pH, packaging temperature, general storage conditions, expected length of storage, and method of emptying container.

Questions Answered by Dr. Ott

- Q. What is the life of linings in drums for liquid soap?
- A. It varies from several months to more than a year. What is liquid soap? Does it vary in composition? Do you have your own particular product with an additional agent? All of those things will affect the life of a drum lining. I don't think you can say definitely how long a drum lining will last. It all depends.
- Q. Are drum linings available now?
- A. Yes, we are making single coat linings now. Later we will be able to make multiple coat linings.
- Q. In testing of linings (performed in cups), I believe you do not consider any lining satisfactory for a given product without six months perfect operation in the laboratory. If a lining stands up satisfactorily under the six months test, should we assume that if it is applied properly to the drum, we could expect at least six months length of service from it in the finished container?
- A. I don't think so because we have realized in the "lab" that a test made in a test cup is an ideal test—probably too ideal. A cup does not get the bumps and bruises that a drum gets in practice. It might crack in freight cars, etc. We always advise that sample drums be made for the customer before we accept an order. Sometimes there isn't time for that, but in general we like to do it. As a rough figure, drum life of two-thirds probably would compare with cup test life.
- Q. In the two-coat drum is the second coat added to strengthen weak points?
- A. We recognize that you can't cover mishandling on the first coat, but by the proper application of your coating, where you test singly and then add the second coat, you should be able almost to predict what will happen. The vinyl type lining is usually put on in two coats and is more flexible than the phenolic type lining, which is put on in one coat. I think the two coat vinyl system would be better than the relatively brittle phenolic, but each lining has its own particular place and application.
- Q. What roughly is the cost of a single coat vinyl lining?
- A. The approximate cost of the lining for soap drums of 55 gal. is 55 cents. Two coats would be about double.

Q. How are the linings applied?

- A. The drum lining is applied when the drum is in three parts—the shell and the two ends. After baking, the drum is assembled by a double-seaming operation, after which the exterior paint is applied. The drum is then given another baking to dry the outside coating. In that way we get complete coverage. The second bake is usually at a lower temperature, about 250° Fahrenheit. The inside lining is baked at from 350° to 400° Fahrenheit.
- Q. You say it takes six months to determine cup tests. Do you run any accelerated tests?
- A. Yes, however they are always open to the usual objection of accelerated tests. The tests we run are made at 140° F. This speeds up the testing about four or five times.
- Q. What progress has been made, if any, by the use of tung oil for linings, or tung oil resins?
- A. Tung oil is used in many resinous coatings. Its function is to give flexibility to the coating.
- Q. Is there a resinous lining developed for fatty acids?
- A. Yes, we can package fatty acids, some in single and some in double. I believe red oil requires double coating. Some of the other types can be done in single coat.
- Q. You spoke about efforts that are being made to standardize the overall dimensions of drums or containers that are the same size. Is that being done by the industry as a whole or by some companies? Is there an association at work on that? How can any company in the Soap Association as a group or as an individual keep abreast of the progress that is being made?
- A. The Steel Shipping Container Institute representing the industry is now engaged in standardizing dimensions for a given capacity. When you get your drums from different suppliers, you get different sizes. They are going to standardize on the rolling hoops, and the physical dimensions of the package eventually will be standardized.

Surface-active Agents

A new book dealing exclusively with surface-active agents presents the theoretical aspects of surface tension, its application to industrial fields, effects of surface-active agents, and the relation between surface tension and other physical properties of matter. The rest of the book deals with diverse branches of industries in which surface-active agents are used, and contains many typical formulas which will facilitate the formulation of emulsions and other products based on surface-active agents.

POTASH SOAPS VS. SYNTHETICS

(From Page 45)

rinsing with an equal amount of soap from the same laboratory glassware?

- A. I think some of the synthetics will do a better job.
- Q. Have you ever noticed the amount or number of times you have to add water to an Erlenmeyer flask to remove the suds. As a result of having the wetting agent in that glassware as compared with soap, it will take about four or five times the rinsing that soap requires.
- A. I don't know why some of the synthetics keep giving suds on and on. At some point the detergent action ceases, but the suds keep going on and on. That is not a desirable characteristic of the synthetic product.
- Q. What experience have you had in combining synthetics with shampoos?
- A. We have tried a few experiments, and we find that we have to use other chemicals in conjunction with the synthetics to stabilize them, such as glycol, alcohol, or glycerine. Petroleum synthetics used in shampoos precipitate out in six or eight months. I cannot see the advantage if you have to take one thing and add another and then add something else because of the other addition.

Methods for the determination of surface tension are described. A comprehensive alphabetical list of wetting and other surface-active agents, giving also the chemical composition, industrial use, and name and address of the manufacturers, will prove of great value to chemists and other workers with these materials. The title of the book is "Surface Active Agents", the author C. B. F. Young and K. W. Coons; 381 pp., published by the Chemical Publishing Co. Brooklyn, N. Y., and sold for \$6.00.

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Follow this Guide

YOUR PROBLEM	FOR THESE INSECT PESTS				
	Flies, ants, gnats, mosquitoes, fleas, ticks, wasps, cockroaches, carpet beetles, moths, silverfish, bedbugs, weevils, cadelle, and other stored product insects.				
	Specially for crawling insects such as cockroaches, ants, bedbugs, ticks, silverfish, lice.				
YOUR PLACE OF USE	UNDER THESE CONDITIONS				
	On surfaces where wetting by water and visible residue are not objectionable.	On surfaces where wetting by water is not objectionable and visible residue is not desired.	On surfaces where wetting by water is objectionable and visible residue is not desired.	For large users who may wish to prepare their own spray mixtures by adding solvents.	On floors and baseboards, in cracks and crevices of woodwork, dark places behind pipes and other places insects infest.
YOUR PRODUCT	— USE —	— USE —	— USE —	— USE —	— USE —
	DEENOL 50-F Wettable powder; mix with water, use as spray. DDT—50%.	DEENOL 25-EM Emulsifiable oil; dilute with water, use as spray. DDT—25%.	DEENOL 5-H Ready-to-use oil spray. DDT—5%.	DEENOL 25-C Concentrated oil; dilute with a solvent, use as spray. DDT—25%.	DEENOL 10-A Ready-to-use dusting powder. DDT—10%.



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Briefs

From Current Literature in the Sanitary Products Field

Synergists for Insecticides

Of the naturally occurring substances containing the methylene dioxyphenyl group, piperine and some of its amides and esters show outstanding toxicity to adult flies when used alone or when added to pyrethrum sprays. Used alone, sesamin and fagaramide show little toxicity but they enhance the toxicity of pyrethrum sprays. A number of additional compounds were synthesized which have synergistic effects with pyrethrum, for example, *alpha*-phenyl-beta-(3, 4-methylene dioxyphenyl) acrylonitrile. M. E. Synerholm and A. Hartzell. *Contrib. Boyce Thompson Inst.* 14, 78-89.

Techniques for Studies of DDT

The use of window traps for the determination of the subsequent kill of mosquitoes leaving rooms treated with DDT is discussed. To determine the residual toxicity of treated walls, insects placed in glass chambers are exposed to treated walls for specific time intervals and then held 48 hours for observation of mortality.

For testing the effect on adult mosquitoes of spray residues on various surfaces, panels having a total surface of 1 square foot are fitted into a wooden framework and adult mosquitoes are introduced into the exposure chamber formed by the panels. After known periods of time they are removed and held for 48 hours to determine mortality. Adult mosquitoes are transferred from chambers to cages by air currents. Each complete test requires approximately 15 minutes and

no injury to mosquitoes or spray residues is evident.

Uniform comparable results in replicated tests, and good correlation with field results have been obtained. The techniques employed in the laboratory testing of DDT as an anopheline larvicide are briefly described. S. W. Simmons et al. *Pub. Health Repts., Suppl. No. 186*, 3-20.

New Rat Poison Tested

The new rodenticide, *alpha*-naphthyl thiourea, a fine gray insoluble powder with little odor or taste, is accepted by rats in 1 per cent mixture with finely ground yellow corn. The poison has been tried successfully in 5 days: (1) in a 2-5 per cent mixture with finely ground corn or wheat; (2) as a spray or dust on ground grain or on fruits or vegetables such as diced apples or sweet potatoes; (3) as a dust by itself or mixed half and half with flour, placed on floors and runways; (4) as a dust on the surface of water; and (5) as a dust blown into burrows and holes with a standard cyanide gas dust pump. The compound kills rats by causing edema of the lungs. *Pharm. J.* 156, Jan. 12, 1946.

Mold Control

Compositions containing 6-nitro trichloro toluene are suitable for controlling fungi, insects, bacteria, molds and other noxious organisms which infest wallboard, rope, fabric, paint, paper, leather, etc. Other chloro nitrotoluenes may be used. The compositions may be fortified by addi-

tion of phenyl mercury oleate or other oil-soluble phenyl mercury compounds. A. L. Flenner and F. H. Kaufert, to E. I. du Pont de Nemours & Co., U. S. Patent No. 2,369,959.

Effect of DDT on Fish

The use of DDT as a larvicide for anopheline mosquitoes needs investigation before the product may be classed as harmless at larvicidal concentrations. Fish, crayfish, tadpoles, and large organisms generally seem to suffer no direct effect from a concentration of 0.1 pound per acre, which represents 0.3 p.p.m. in the first 3 inches of water, if the average depth is greater than 3 inches. An overall concentration of 0.25 p.p.m. from which escape is impossible produces some mortality of fish and other large organisms. Protozoa and algae are unaffected by concentrations up to 1.0 p.p.m. Concentrations as high as 1.0 p.p.m. become nontoxic in less than 6 days to the above organisms in shallow waters. None of the carriers or dispersing agents used for DDT was toxic at the concentrations used. J. B. Lackey and M. L. Steinle. *Pub. Health Repts., Suppl. No. 186*, 80-9.

Moth Killer

A composition especially suitable for the protection of woolen materials from moths consists of 1,2,4-thiodiazole admixed with one or more powdered carriers or aqueous diluents or insect bait material. E. I. du Pont de Nemours & Co., to Imperial Chemical Industries Ltd. British Patent No. 559,260; through Chem. Abs.

Toxicity of DDT to Bedbugs

DDT deposited on surfaces in an oil film is more toxic to bedbugs than in a dry film. Volatility of the medium in which DDT is applied contributes to the toxicity of dry films. Contact for about one hour is lethal. This period is constant for any kind of DDT-treated material. Persistence of toxicity varies with the nature of the treated surface. DDT-coated cement, plain wood, and glass killed approximately 80 per cent of the bugs, and the films were active

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for 6 months. Old painted wood surfaces were highly toxic for 1 month, then lost their toxicity quickly. Newly painted surfaces lost much of their effectiveness within 48 hours. On glass, films gave only 76 per cent kill three months after application.

The minute crystals of DDT deposited on the surface are responsible for toxicity; large crystals are without marked toxic action. Solvents that deposit very small crystals should therefore prove most economical. On smooth surfaces even small crystals of DDT do not withstand household operations. Rubbed treated surfaces can be renewed by application of a fine oil film. Pyrethrum is much more toxic to bedbugs than DDT, but as residual sprays, the latter compounds are far more effective. S. Barnes. *Bull. Entomol. Research* 36, 273-82.

Control of Mite Infestations

Beta, beta'-Dithiocyano diethyl ether readily killed mites when dusted into the hair of experimental animals but did not kill the eggs or larvae. The toxicity is low so that the compound should be useful as an insecticide for this treatment. Animals that lick their fur cannot be treated with DDT. F. H. J. Figge and G. F. Wolfe. *Proc. Soc. Exptl. Biol. Med.* 60, 136-8.

Pyrethrin Analysis

In the mercury reduction method for the determination of pyrethrin I in pyrethrum powder and pyrethrum extracts in mineral oil, it is recommended that the reduction be carried out at 25°C. for a period of 1 hour, and that the factor used be 1 ml. of 0.01 Molar potassium iodate equal to 5.7 milligrams of pyrethrin I. J. J. T. Graham. *J. Assoc. Official Agr. Chem.* 28, 571-5 (1945).

Mothproofing Composition

A mothproofing composition contains magnesium silicofluoride and a lower alkanolamine silicofluoride such as ethanolamine silicofluoride, in the ratio of about 1-3 to 1. H. I. Jones. Canadian Patent No. 432,545.

DDT in Aquatic Use

In laboratory tests, DDT concentrations greater than 0.1 ppm. were toxic to goldfish. In field tests, DDT in dusts and in oils applied to the water surface were not harmful to fish at doses used for mosquito control. Suspensions of DDT affected frogs, snakes, crayfish, spiders and various species of aquatic insects. Warm-blooded animals were not harmed by DDT at larvicidal dosage. P. M. Eide, C. C. Deonier, and R. W. Burrell. *J. Econ. Entomol.* 38, 492-3 (1945).

Insecticidal Compounds

Insecticidal compounds have the formula $\text{HOCH}_2\text{CH}_2\text{NHR}$ where R is an alkyl or alkenyl radical containing at least 6 carbon atoms. Data show that the *N*-octyl and *N*-dodecyl compounds are toxic to houseflies at 5 per cent concentration in kerosene. The compounds may be used in solution, in water emulsions, or in dusts with inert carriers such as talc. A. W. Ralston, J. P. Barrett, and M. R. McCorkel, to Armour and Co. U. S. Patent No. 2,383,564.

Methods of Analysis of DDT

Collaborative study was made of the determination of DDT in a sample of the pure compound dissolved in acetone, by estimation of total chlorine by the modified Winter method, and by the alcoholic potassium hydroxide method. By the modified Winter method 3 of the collaborators obtained recoveries of 98.7-99.8 per cent, and the other two obtained recoveries of 87.2 and 89 per cent. By the alcoholic potassium hydroxide method the recoveries by the 5 collaborators were 97.0-102.3 per cent. Both of these methods are dependent to a certain extent on the purity of the DDT.

The technical grade contains approximately 75 per cent of DDT, the remainder consisting chiefly of DDT isomers. This technical grade is currently required to contain 48-51 per cent of organically bound chlorine. It is known that at least some of the isomers of DDT react with alcoholic potassium hydroxide in the same manner as DDT. Somewhat high and

erratic values may be obtained for the technical grade. The potassium hydroxide method has the advantage over the total chlorine method in that it determines DDT and isomers and excludes 2, 2-bis(chlorophenyl)-1,1-dichloroethylene, which is the most likely decomposition product of DDT and has a lower insecticidal value. E. E. Fleck. *J. Assoc. Official Agr. Chem.* 28, 585-9.

Mamey Seed as Insecticide

In search for insecticides from plants already established in the western hemisphere, the mamey tree (*Mameia americana* L.) was investigated. The most toxic part of this plant is the kernel of the mature seed. It was found that the toxicity is not attributable to pyrethrins, but may be due to a somewhat similar type of substance. M. A. Jones and H. K. Plank. *J. Am. Chem. Soc.* 67, 2266-7 (1945).

Parasiticide

A parasiticide and fungicidal preparation contains as its active ingredient a halogen-substituted naphthoquinone. W. P. ter Horst, to Dominion Paper Co. Ltd. Canadian Patent No. 433,129.

DDT as Household Spray

Xylene was found to be a satisfactory solvent for DDT and was easily emulsified. "Triton X-100" proved to be a good inexpensive emulsifier. A nominal 5 per cent spray emulsion was applied at 4 cc. per square foot to obtain a safe and effective residual dosage of 200 milligrams of DDT per square foot. H. Stierli, S. W. Simmons, and C. M. Tarzwell. *Pub. Health. Repts., Suppl.* No. 186, 49-65.

Test DDT Mosquito Control

After application of DDT in kerosene and in aqueous emulsion (56 milligrams and 208 milligrams of DDT per square foot), the light application in buildings gave 91 per cent, the heavy application 99 per cent reduction of malarial mosquitoes in the sprayed buildings throughout the season. J. B. Gahan and A. W. Lindquist. *J. Econ. Entomol.* 38, 223-30 (1945).

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Ten per cent of Tetmosol soap when applied once daily in the form of a lather containing approximately 1.8 per cent of tetraethyl thiuram monosulfide, completely protected experimental rats exposed to intense infection from scabies from *Notoedres* over a period of 16-17 days. It is suggested that 5 per cent of the monosulfide compound when incorporated in soap represents the lowest concentration likely to confer complete protection. R. M. Gordon and K. Unsworth. *Ann. Trop. Med. Parasitol.* 38, 207-12.

DDT Studies in Dwellings

In unoccupied buildings treatments of 200 milligrams of DDT per square foot killed a high percentage of the mosquitoes which entered the building for a 5-month period after treatment. Results showed that DDT residues are effective against mosquitoes in unscreened houses, as many dead mosquitoes were found on the floors of such buildings after they had been sprayed with DDT. In occupied houses treatment with 100 and 200 milligrams of DDT per square foot did not give as high a percentage of kills as was obtained in unoccupied houses. This was due in large measure to the fact that in occupied buildings only portions of the available resting places were treated. Safe resting places were provided by untreated furniture, exposed clothing, pictures etc.

The DDT spray was especially effective against flies, bedbugs, and native cockroaches. In treating occupied houses all possible surfaces should be carefully and thoroughly sprayed, even though such treatment prolongs the spraying time. Kills of 100 per cent were obtained in 4½ hours or less under normal conditions. The toxicity resulting from a single spraying with 200 milligrams of DDT per square foot in vacant rooms gave good kills for a period of more than 11 months. Temperature greatly influenced the rate of knockdown,—the higher the temperature, the more rapid the effect of the DDT. The use of DDT is considered a spectacular step forward in the suppression of ma-

laria. C. M. Tarzwell and H. Stierli. *Pub. Health Repts., Suppl. No. 186*, 35-48.

Moth Control in Vaults

Because of the severe shortage of *para*-dichlorobenzene for control of moths in garment storage vaults, some cleaners and laundrymen have tried DDT as a substitute. The compound is effective for killing moths but on contact with the insecticide only. It does not vaporize and act in vapor form as *para*-dichlorobenzene does. This means that DDT solution must be sprayed on all garments in order to give protection.

Another method tried was to use DDT in dry-cleaning solvent, but this may result in corrosion to equipment and is not considered advisable. Apparently to date there is no satisfactory substitute for *para*-dichlorobenzene for use in storage vaults or even an equivalent practical method of moth control. *Laundry & Dry Cleaning J. of Canada, Feb., 1946.*

Insect Damage to Nylon

Nylon, finished completely or finished by the scouring process, is highly susceptible to damage by larvae of several species of dermestid beetles, particularly *Anthrenus verbasci*. Cotton cloth is similarly damaged. A scour containing a sulfonated oil and sodium silicate imparted the greatest attractiveness of the fabric to the larvae; a sulfated alcohol which was both a scour and a finishing agent gave the second degree of attractiveness; a sulfonated oil imparted least attractiveness. Nylon is not digested by the larvae but may have a slight attractiveness. The finish of digested by the larvae but may have a slight nutritive value. The finish of the fiber is probably the critical factor in attack by these insects. R. L. Patton. *J. Econ. Entomol.* 38, 522-3.

"Thanite" for Ants

"Thanite," which is isobornyl thiocyanacetate, acts as a contact poison. Invasions of ants into houses are stopped immediately by atomizer applications of this compound. R. H. Smith. *J. Econ. Entomol.* 38, 604.

Rat Control

Prebaiting is shown to be a more efficient method of rat control than direct poisoning. Under the prebaited feeding-station method using dry cereal bait, zinc phosphide is fully as efficient as thallium sulfate and its use has the advantage of avoiding secondary poisoning to other animals. Yellow phosphorus is a less effective raticide, while forms of red squill, strychnine, and arsenic are distinctly inferior. The benefits derived from the use of oil and sugar as attractants and of coloring agents as a means of identifying poisoned baits are discussed. R. E. Doty. *Hawaiian Planters' Record* 49, No. 2, 71-239; through *Chem. Abs.*

Emulsifying Agent for DDT

DDT emulsions are readily prepared through the use of a new liquid nonionic emulsifier, nonaethylene glycol monooleate S725, made by Glyco Products Co., Brooklyn. The amount of DDT required to give the desired concentration is dissolved in a suitable amount of a solvent such as xylol. About 10 per cent of the liquid S725 is added to the DDT solvent solution, with which it is readily miscible. This DDT solvent concentrate is then added to the desired amount of water, whereupon it forms stable emulsions with little or no agitation.

DDT Toxicity

Sprays containing more than 0.1 gram of DDT per 100 cc. of kerosene were very toxic to the housefly, *M. domestica* L.; 1 gram per 100 cc. of kerosene was effective for practical use, but lower concentrations gave slow speed of knockdown. This can be remedied by adding a small amount of pyrethrum. A mixture of 0.03 gram of total pyrethrins and 0.1 gram of DDT per 100 cc. of kerosene furnishes a practical spray which will keep at least 17 months in glass bottles at 27.5°C. Addition of a suitable activator such as sesame oil or isobutyl undecylenamide will increase its toxicity. The impurities in curde DDT are nontoxic to houseflies. E. P. Parkin and A. A. Green. *Bull. Entomol. Research* 36, 149-62 (1945).

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Residual Toxicity Studies

Residues from pyrethrum and DDT sprays corresponding to 200 milligrams of pyrethrins and DDT per square foot of surface, were compared with respect to knockdown and toxicity against the malarial mosquito, *Anopheles quadrimaculatus*. Pyrethrin residues showed greater knockdown than DDT residues. Mortality, however, favored DDT, but after 12 weeks the pyrethrin residues still showed 87-90 per cent mortality. R. L. Metcalf and C. E. Wilson. *J. Econ. Entomol.* 38, 499 (1945).

Mildew Proofing

Examination at the Shirley Institute of a large number of substances on the growth of mold fungi led to the discovery of some which prevented growth of molds in culture media at very low concentrations. The most promising were salicylanilide (Shirlan), *ortho*-chloro mercuriphenol, *para*-acetoxy mercuriacetanilide, thallium carbonate, *para*-nitrophenol and trichlorophenol. Only salicylanilide possessed a sufficient number of the desired properties of an antiseptic for general use in the textile industry. Mercaptobenzothiazole is only slightly less effective and can be applied simultaneously; *para*-nitrophenol is used fairly extensively.

To afford resistance in materials of high mildew capacity, two or more antiseptics may be combined, generally contrasted in chemical constitution and in partition coefficient between oil and water. One may prevent growth of a particular species which resists or decomposes the other. Pairs which have been employed with success are salicylanilide and *para*-nitrophenol, and salicylanilide and mercaptobenzothiazole. This procedure has become important for many articles intended for use in the Tropics. R. G. Fargher. *J. Soc. Dyers & Colorists* 61, 118-22 (1945).

DDT in Mosquito Control

DDT in various formulations is toxic to larvae of *Culex pipiens*, *Aedes sollicitans*, and some other sub-surface feeders. Against the pupae of these mosquitoes it is much less toxic. Before DDT can be recommended for

practical mosquito control, more extensive field investigations will be necessary. J. M. Ginsburg. *J. Econ. Entomol.* 38, 494-5 (1945).

Larvicidal Aerosols

Laboratory and field experiments have demonstrated possibilities of applying DDT in liquefied-gas aerosols to control anopheline-mosquito larvae. Complete mortality was obtained under laboratory conditions with aerosols at distances of 60 feet from the point of release. When fatty acids were incorporated in the aerosol, the deposits on the water surface were effective after several artificial rains. In the field, the aerosols were lethal at a dosage of 0.1 pound of DDT per acre. Application by airplane appears promising. H. A. Jones, C. C. Deonier, R. W. Burrell, and E. F. Knipling. *J. Econ. Entomol.* 38, 432-3 (1945).

Yam Bean as Insecticide

The ether extract of yam beans was divided into a nontoxic oil and a resin toxic to insects. The resin was fractionated by chromatographic methods, yielding one noncrystalline and 6 crystalline compounds, and 3 heterogeneous fractions. One of the crystalline compounds was identified as rotenone, a second called erosine was closely related to elliptone. Three of the compounds and one of the heterogeneous fractions were toxic to the silkworm, but two of these were of low toxicity to the Mexican bean beetle. The toxic heterogeneous fraction probably contained at least one toxic compound not isolated. L. B. Norton and R. Hansberry. *J. Am-Chem. Soc.* 67, 1609-14 (1945).

DDT Determination

DDT may be determined in small amounts down to 10 micrograms by a method which involves intensive nitration and the production of colors by the nitrated products in benzene plus methanolic sodium methylate. This color reaction can also be used as a test for degradation products of DDT and some compounds related to it. M. S. Schechter, S. B. Soloway, R. A. Hayes, and H. L. Haller. *Ind. Eng. Chem., Anal. Ed.* 17, 704-9 (1945).

DDT on Wall Surfaces

Laboratory tests were made with the disease-carrying mosquitoes, *Anopheles quadrimaculatus* and *Aedes aegypti* in contact with surfaces sprayed with DDT preparations applied at the rate of 10-400 milligrams of DDT per square foot. Aqueous DDT emulsions and suspensions were equally effective on wood surfaces, and both types of preparations were slightly superior to DDT-kerosene spray. A 2-4 hour contact was required for a lethal dose. Residues were effective for 32 weeks when mosquitoes were exposed 24 hours to them. Sunlight had a low deleterious effect on DDT residues. On unpainted surfaces and on surfaces with 2 coats of cold-water casein paint, DDT residues were highly toxic; on surfaces covered with oil paint the residues were less effective. DDT activated mosquitoes that rested on treated surfaces, causing them to fly but the contact gave them a lethal dose. J. B. Gahan, B. V. Travis, and A. W. Lindquist. *J. Econ. Entomol.* 38, 236-40 (1945).

Spray Analysis

Kerosene-based sprays may be analyzed for DDT and pyrethrins. The latter are separated by adsorption on alumina cream. DDT is dehydrochlorinated in alcoholic potassium hydroxide and the chloride determined by silver nitrate titration. Details of the procedure are described. R. F. Powning. *J. Council Sci. Ind. Research* 18, 121-3 (1945).

Kerosene for DDT

The solubilities of technical and pure DDT in a number of kerosenes over the range of 30° to -30° C. were determined. Kerosenes obtained from naphthenic-base crude oils dissolve more DDT than do those obtained from paraffin-base crude oils. The aniline point of the kerosene may be used as a general guide to its solvent power for DDT. The addition of petroleum fractions rich in alkylated naphthalenes retards the crystallization of DDT from kerosene solution held at -30° C. In general the solubility of DDT increases as the aniline point decreases. E. E. Fleck and H. L. Haller. *Ind. Eng. Chem., Anal. Ed.* 18, 177-8 (1946).

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New Surface Sprayers

Two new sprayers for applying surface treatments in the household are announced by Paul Engstrum, industrial engineer, 1001 14th Street, NW, Washington, D. C. Both sprayers are used for applying residual or surface sprays to walls, baseboards, cupboards, screens, beds, closets, and elsewhere about the house. When used with an appropriate insecticide, either sprayer will deposit an invisible residue which kills by contact such insects as flies, mosquitoes, ants, moths, silver fish, bedbugs, fleas, cockroaches and other household pests. Because the trigger of either device is operated with one hand, the other hand is free to arrange or to prepare surfaces that are to be treated.

One of the sprayers is shaped like a pitcher, is made of polished aluminum, and holds one pint of insecticide concentrate. It is provided with a small air pressure pump, located in the top of the device, which with a moderate amount of pumping develops enough pressure to propel about one-fourth of a pint of the insecticide. The liquid is dispersed through a small nozzle controlled by a thumb pressure lever. One filling of the container is sufficient for applying a residual coating to 125 square feet of surface. A larger model is being developed for treating larger surfaces such as are found in barns, dairies, and in other places where foods are handled.

The other sprayer is slightly larger than a big flashlight, is cylindrical in shape, and is made of a nicked metal. It possesses a pump in one end, a refilling cap in the other end, and a



nozzle on its side. This sprayer is used advantageously in small spaces and from any position of the device. Both sprayers are well constructed and are designed to last for many years.

Mr. Engstrum and his associates acknowledge the cooperation of Dr. W. E. Dove and other prominent entomologists in the development of these sprayers.



Sees Rotenone Consumption Up

Postwar consumption of rotenone in the U. S. will run to about ten million pounds of five per cent roots annually if supplies are available according to a recent estimate of the Office of Foreign Agricultural Relations of the U.S.D.A. This figure does not take into account roots necessary for restocking of inventories. The OFA states that far from having its market displaced by other insecticides, with lower prices for rotenone bearing materials and good prices for agricultural

products, it is possible that U. S. consumption of rotenone roots will be double that of 1940-41, or perhaps 13,000,000 pounds.

N. Y. Code Excludes DDT

According to Dr. W. D. Tiedman, chief of the Bureau of Milk Sanitation, New York State Dept. of Health, DDT is not a poison as defined in Regulation 9 of Chapter IX of the Sanitary Code and no attempt will be made at this time to place the product under regulations as to labeling or

coloring. This was revealed recently by the National Association of Insecticide and Disinfectant Manufacturers, Inc., who had received this information in a letter from Mr. Tiedman. Previously, consideration was reported being given to placing DDT products under the provisions of the regulation.

Rose Exterminator Co. Moves

Rose Exterminator Co., Chicago, announced late in April that they have moved to new quarters at 1809 W. North Ave., Chicago 22.

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Camson Succeeds Joyce at Orbis

Edwin J. Camson, who has been with the company in production, research and insecticide and allied products development capacities since 1932, has been appointed sales manager of the insecticide division of Orbis Products Corp., New York, it was announced recently. He succeeds Robert F. Joyce, who died suddenly at his home April 3. Mr. Camson studied chemical engineering at Columbia University and was graduated in 1932. He has been with the company since, working in the factory at Newark, N. J.

Vogel-Ritt Open Detroit Branch

Vogel-Ritt, Inc., Philadelphia exterminating and fumigating house, recently announced the opening of a branch office in Detroit, with temporary quarters at 6432 Cass Ave. Negotiations are under way and are expected to be completed within a short time for the purchase of a suitable building, the company stated. Joseph A. Watkins of 16754 Fenmore Ave., Detroit, is in charge of the Vogel-Ritt Detroit office.

Continental Can DDT Booklet

Continental Can Co., New York, recently announced a 24-page booklet on DDT prepared by H. E. Peterson and W. G. Palmer of the company's research department. Considered in the booklet are chemistry and formulation of DDT, its effects on insects and plants, DDT toxicity, packaging of DDT and labeling of DDT formulations and three tables showing its effect on insects, plants and the various types of plate used in the manufacture of containers.

NAIDM to Honor Dr. McDonnell

Dr. C. C. McDonnell, formerly chief of the Insecticide Division of the U. S. Department of Agriculture, Washington, D. C., has been proposed as an honorary member of the National Association of Insecticide and Disinfectant Manufacturers, Inc., the asso-

ciation announced April 15. Dr. McDonnell's election will be taken up at the mid-year meeting of the N. A. I. D. M. at French Lick Springs Hotel,



DR. C. C. McDONNELL

French Lick, Ind., June 17-19. Dr. McDonnell retired in 1945 as chief enforcement officer of the Insecticide Act of 1910, after serving in that post for many years.

Joins Velsicol's Sales Staff

Dixon C. Van Winkle has joined the eastern sales staff of Velsicol Corp., Chicago, the company announced recently. A native of New Jersey and a graduate of Rutgers University, Mr. Van Winkle was previously affiliated with Kellogg Corp. He will make his headquarters in the firm's eastern offices, 11 Park Place, New York.

Ohio P.C.O.'s Organize, Elect

At a recent meeting of Ohio pest control operators, a new association was formed to be known as Ohio Pest Control Operators' Association. Officers were elected at the meeting which was held at the Deshler-Wallick Hotel, Columbus. William O. Buettner, secretary of the National Pest Control Association, was present and served as temporary chairman of the meeting. Dr. T. H. Parks, Extension Entomologist of Ohio State University,

addressed the group after luncheon. The following officers and directors were elected: President, H. K. Steckel, Tornado Mfg. Co., Columbus; vice-president, W. R. Phippard, Wilmar Co., Cincinnati; secretary-treasurer, Miss Barbara A. Laing, Laing Exterminating Co., Cleveland; directors, H. Studier, Guarantee Exterminating Co., Cleveland; H. Militzer, H. & M. Laboratories, Toledo; W. M. Faulkner, T. & F. Exterminating Co., Zanesville; Richard K. Barnett, Barnett Pest Control, Dayton, and Robert Yeager, Rose Exterminating Co., Cincinnati.

Three New N.A.I.D.M. Members

New members recently elected to membership in the National Association of Insecticide and Disinfectant Manufacturers, Inc., New York, include Westinghouse Electric Corp., insecticide division, Springfield, Mass., and J. T. Baker Chemical Co., Phillipsburg, N. J., active members; and R. E. Chapin Mfg. Works, Inc., Batavia, N. Y., associate member.

Commercial Enterprises Formed

Commercial Enterprises, Inc., a distributing firm handling several lines of metal cleaners and fire chemicals, is reported recently to have been opened at 1601 N. Sixth St., Fort Smith, Ark., by L. A. Thomasson and F. W. McMillan. Both men are veterans, Mr. Thomasson having served overseas as a major with the U. S. Army in China, while Mr. McMillan was a Navy inspector in Cleveland and Washington, D. C., during the war.

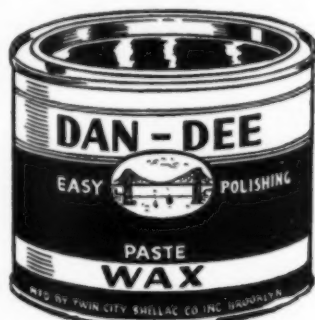
Plan Pest Control Meeting

National Pest Control Association will hold its 14th annual meeting in New Orleans, La., on October 28, 29, 30, 1946, with headquarters at the Roosevelt Hotel, according to William O. Buettner, secretary. An attendance of 600 is anticipated and hotel arrangements are now being arranged. In view of limited hotel accommodations in New Orleans, arrangement to house the membership is being made at five other hotels in addition to the Roosevelt, including the Jung, Monteleone, St. Charles, New Orleans, and De Soto.

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Plan NAIDM Program For June 17-19 Meeting

TWO reports on DDT toxicity to humans, one by Dr. Victor Froelicher of the Geigy Co. and the other by Dr. D. Neale of the U. S. Public Health Service, both representing the latest data on the subject, will be presented at the 32nd annual mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers to be held June 17-19 at the French Lick Springs Hotel, French Lick, Indiana. Other high lights of the meeting will include papers on live stock sprays by R. L. Cuff of the USDA and H. S. Telford of Dr. Hess & Clark, Inc. Aerosol marketing, its potentialities, floor finishes, carnauba wax situation, cold sterilization methods, disinfectant testing and evaluation, quaternary ammonium compounds in disinfection, and other allied topics are on the program. An open forum on insecticide questions and answers is also scheduled, answers to be given by experts to questions previously submitted.

The three-day meeting at French Lick will open on Sunday, June 16, with a meeting of the Board of Governors and committee chairman, followed by general open sessions all day Monday, June 17, and morning sessions on June 18 and 19, according to H. W. Hamilton of the Koppers Company, NAIDM secretary. The program as tentatively announced is being arranged by a committee headed by Clarence Weirich of the C. B. Dolge Co., Westport, Conn. A sports program has been arranged with Charles W. Furst of the Furst-McNess Co., Freeport, Ill. in charge of a golf tournament on Tuesday afternoon, June 18. Following the close of the meeting on Monday afternoon, June 17, a soft ball game between insecticide and disinfectant teams, and a horse-shoe pitching contest, both in charge of H. W. Jordan of the Federal Chemical Co., Indianapolis, will be held.

On Tuesday evening, June 18, an informal dinner will be held at which prizes for the sports program



"Pluto Spring" at French Lick Springs, half-way mark for rapid early morning walkers at this Indiana resort where NAIDM meets June 17-19.

will be presented by Charles Furst. J. B. Magnus of Magnus, Mabey & Reynard, Inc., New York, is chairman of a committee of associate members which is procuring and donating the prizes. Following the dinner, a floor show will be staged which is being arranged by Frank Nowland of the George H. Nowland Co., Cincinnati. Following a business session on Wednesday morning, June 19, the meeting will close at noon. Duties of presiding officer at the various sessions will be shared by N. J. Gothard of Sinclair Refining Co., NAIDM president, and Gordon Baird of Baird & McGuire, Inc., and A. W. Morrison of Socony-Vacuum Oil Co., vice-presidents.

Chemical Salesmen Hear Dr. Keyes

Dr. Donald B. Keyes, director of research of Heyden Chemical Co., New York, was guest speaker at the April 25th luncheon meeting of the Salesmen's Association of the American Chemical Industry, which was held in the Hendrick Hudson room of the Roosevelt Hotel. Dr. Keyes, who is co-author of the book "Chemical Engineering Manual," and who spent

three summers in Europe previous to the war, spoke on "Industrial Intelligence in Germany."

The next luncheon of the Association will be held Thursday, May 23. Dr. Wallace P. Cohoes, president of the Chemist's Club of New York, will be guest speaker. His topic has not been announced as yet.

United Expands Activities

Three new developments were announced recently by United Sanitary Chemicals Co., Baltimore manufacturers and distributors of sanitary chemicals and janitors' supplies. United has acquired for further expansion the property at 23-25 S. Howard St., which is adjacent to its present location at 27 and 29 S. Howard St. The company has organized a subsidiary company for the purpose of distributing its products on a wholesale basis to hardware, variety and drug stores under the name of Mitchell Distributing Co. The subsidiary organization occupies part of the 29 S. Howard St. building.

In addition, United has purchased the manufacturing rights and patents of Woods Waxing Machine Co., a Pennsylvania organization, and has formed and incorporated a unit in Maryland as Woods Waxing Machine Corp. Murray L. Schuster, head of United Sanitary Chemicals Co. is president. Production of electric floor waxing equipment by the newly formed company, which will also make its headquarters at 29 S. Howard St., will begin within the next few months, the company stated.

Pennsalt Issues Bleach Leaflet

Pennsylvania Salt Manufacturing Co., Philadelphia, recently issued a six-page, two-color leaflet on "Perchloron," a laundry trade bleach. Copies are available from the company's laundry and dry cleaning division, 1000 Widener Building, Philadelphia 7, Pa.

Modern Floors Moves

Modern Floors Mfg. Co., Washington 9, D. C., has just announced that it is located in new quarters at 2431 18th St., N. W., directly across the street from its former location.



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Mild, general household cleaner for painted surfaces in one application. Needs no wiping or rinsing. Fine, white, free-flowing TRI-MET is an excellent substitute for Tri-Sodium Phosphate in household compounds.

DISHWASHING COMPOUND

(Pink or White)

Built to Government specifications for machine dishwashing.

CONCENTRATED
SOAP POWDER

Type 1 For laundry

Type 2 For hand dishwashing

HAND CLEANER

Powdered — in bulk or shaker containers

METAPLUS

For general industrial cleaning

DRIVEWAY CLEANER

For driveways, runways, garage and factory floors, grease pits, etc.

*We are basic manufacturers,
and our products are cur-
rently available in carlots.*

MACKENZIE LABORATORIES, Inc.

Front and Yarnall Streets, Chester, Pa.

New Edco 5 Lb. Aerosol Bomb

Edco Corp., Newark, Del., recently introduced a new, refillable, five-pound, aerosol bomb that will be marketed under the name, "Mul-T-Vapor." With an estimated capacity of 750,000 to 1,250,000 cubic feet, the new bomb can be had with or without DDT. The dispenser is equipped with handle grip. Available for immediate delivery.

Katz' Form Own Company

Alexander E. Katz and Leonard Katz, formerly associated with Florasynth Laboratories, Inc., New York, have retired as chairman of the board

and a vice-president, respectively, it was announced recently. They will engage in their own business under the trade name, "Dr. Alexander Katz & Co., Essential Aromatics," with a regular staff, maintaining a manufacturing plant and principal offices at 4641-3 Hollywood Boulevard, Los Angeles, and at 304 E. 23rd Street, New York. Branch offices will be maintained at 948 Howard St., San Francisco, and in Dallas, Seattle, New Orleans and other principal cities throughout the U. S.

Florasynth will continue to operate its business as heretofore with its regular staff, maintaining principal offices and laboratory as before at 1513 Olmstead Ave., Bronx, N. Y.



New Hydraulic Sprayer

A new, hand operated, all-metal, hydraulic sprayer, has been developed by Cornelius Co., Minneapolis, for aerosol type spraying of insecticides, disinfectants, etc. Made entirely of brass and stainless steel, the sprayer has neither packing nor gaskets, yet it can be operated in any position without danger of leakage, according to the announcement, due to specially designed airlock around piston. An important feature of the new sprayer which measures less than six inches from nozzle to handle, is the use of a hydraulic principle by which a 300 pound nozzle pressure is built

Showing operation of new, all-metal, hydraulic sprayer, built by Cornelius Co., Minneapolis, for aerosol type spray for insecticides, disinfectants, etc.

up with a single $2\frac{1}{8}$ inch stroke of the piston. This pressure, discharged through a special nozzle containing an orifice .006 of an inch in diameter, is said to reduce fluids to an aerosol fog.

The new sprayer is supplied complete with an eight ounce screw-type glass container. An extra container is included in each package for use with different types of solutions.

M & C Changes Name, Expands

Multi-Clean Products, Inc., is the new name of M & C Maintenance and Manufacturing Co., St. Paul,



H. B. Quick



W. J. Philippbar

Minn., announced late last month. In addition to the change in name of the company, the addition of new personnel and plans to expand production of the company's line of floor and carpet machines, industrial vacuum equipment and maintenance chemicals and supplies in its new plant at 2277 Ford Parkway were announced. H. B. Quick, formerly of the wax and polish division of Minnesota Mining and Manufacturing Co., has joined the firm as general sales manager, and W. J. Philippbar, who served as superintendent of production for Glidden Co., Farwell, Ozmin, Kirk & Co., and Harris Paint and Varnish Co., has been appointed production superintendent of the Varnish and Chemical Specialties division.

2, 4-D Countersuit Filed

American Chemical Paint Co., Ambler, Pa., filed suit in the Federal District Court, Wilmington, Del., recently, against Sherwin-Williams Co., New York, asking treble damages for alleged infringement of U. S. Patent No. 2,390,841 covering use as a weed killer of 2-4-dichlorophenoxyacetic acids, its esters and salts. The suit was filed as a countersuit to Sherwin-Williams' suit of March 6, at which time Sherwin-Williams Co. filed for a declaratory judgment regarding the validity of the patent.

Safety Fumigant Co. Moves

Safety Fumigant Co., Boston, announced recently that they have moved their main office to 158 State St. This is said to be a larger and better suited location than that formerly occupied by the company at 31 India St.



For the ideal base
with DDT Solutions

specify
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Because Penn-Drake INSECTI-SOL stays odorless, and evaporates completely, it is the ideal base for use with DDT solutions or with DDT crystals in low concentrations, as well as with insecticides of other types. INSECTI-SOL is 100% volatile, floats longer and gives maximum penetration.

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Insecti-sol
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3. LONGER FLOATING
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Refineries at KARNES CITY and TITUSVILLE, PA.
BRANCHES: Cleveland, Ohio; Edgewater, N.J.

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NEWARK, N. J.

Janes Joins Socony-Vacuum

Dr. Melvin J. Janes has recently joined the staff of Socony-Vacuum Laboratories as an entomologist.



DR. MELVIN J. JANES

Dr. Janes received his B.S. and M.S. degrees from Utah State Agricultural College and his Ph.D. from Iowa State College. Beginning in 1935, he was for several years entomologist with the Texas Agricultural Experiment Station, being engaged in cotton, fig, and truck crop insect investigations. He was later associated with the Virginia Agricultural Experiment Station in fruit insect research, and during the past year was employed in insect control supervision on West Coast Army posts by the Army Ninth Service Command.

Wilson Opens N. Y. Office

Wilson Chemical Co., Brooklyn, recently announced the opening of a New York office at 35 Water St., New York 4. The head of Wilson Chemical Co. is James R. Wilson, formerly of Tedlee Chemical Corp. and Regal Chemical Corp., Brooklyn.

Gammexane No DDT Replacement

Tests in the United States show that the new English developed insecticide sometimes referred to as benzene hexachloride is not a replacement for DDT and at present has serious shortcomings, it was stated recently by D. W. H. Tisdale, director of the Pest Control Research Laboratory of E. I.

du Pont de Nemours & Co., Inc., Wilmington.

"While it shows real promise as an additional lethal weapon against many insect pests," Dr. Tisdale explained, "hexa-chlorocyclohexane, to use its correct chemical name, will require more research work before it can contribute importantly to the welfare of man. It has a disagreeable, pungent odor, and does not possess the long-lasting toxicity in the field that makes DDT so outstanding." Experimental reports point to limited use of the insecticide for controlling household, storage and livestock insects because of the odor. It is more toxic to flies and cockroaches than DDT.

Eastern Pa. P.C.O.'s Meet

The first 1946 quarterly meeting of the Eastern Pennsylvania Pest Control Association was held at the Hotel Lorraine, Philadelphia recently. Business matters taken up included discussions of cost accounting and job pricing. The association president, W. C. Sharp, reported that Penn State College has been contacted with the idea of establishing a series of short courses in entomology there. The next meeting of the association is set for June 11, in Philadelphia.

New type dispenser package for "Roteicide" roach powder ejects the powder when the container is squeezed. The sharp tip of the package permits use in corners and along wall boards. The product is made by Rotenone Products Co., East Orange, N. J. Photo courtesy Flexible Packaging Institute.



NSSA to Hear E. B. Moran

E. B. Moran, manager of the Central Division of the National Association of Credit Men, will speak on



E. B. MORAN

the subject of "Synchronizing Sales and Credits for Maximum Distribution" at the National Sanitary Supply Association convention and merchandise display, May 28. The convention program follows:

Monday, May 27th.

Merchandise Display, 9 a.m. to 1 p.m.
Business Sessions, Roosevelt Room—2 p.m. to 5 p.m.

Report of officers
Adoption of new constitution
Appointment Nominating Committee

Address: "Synchronizing Sales & Credits for Maximum Distribution," By E. B. Moran

Address: Tom Collins, Assistant to publisher and daily columnist, Kansas City Journal

Tuesday, May 28th.

Merchandise Display, 8 a.m. to 1:30 p.m.
Business Sessions, Roosevelt Room—2 p.m. to 5 p.m.

Report of Nominating Committee
Election of Officers

Address: V. Froelicher, Geigy Company, Inc., "Uptodate Facts on D.D.T."

Address: J. Robert York, Western Service Manager, Bureau of Advertising, American Newspaper Associates, "Industry and Public Opinion"

Tuesday Night, 7:30 p.m.

Terrace Garden
Banquet
Speaker: Dr. Preston Bradley

Wednesday, May 29th.

Merchandise Display, 8 a.m. to 10:30 a.m.

Business Session, 10:30 a.m. to 12 Noon. Roosevelt Room
Luncheon Officers and Directors

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These Facts When You Look for a Source of Supply for SANITARY SPECIALTIES

● **LOCATION**

The Chemical Supply Company is located in the heart of the population and industrial center. Jobbers will find the excellent rail, water and motor facilities a great help in assuring early delivery to their customers.

● **RELIABILITY**

The Chemical Supply Company was established in 1898. Its financial responsibility is of the best. Its management is active and aggressive. Its line is complete in every way to permit you to deal with one large responsible concern that can give you every needed advantage in quality, quantity and service at lowest cost.

● **SATISFACTION**

Our background of manufacturing experience and continual experimenting keeps our products in a class by themselves. Consequently, they command a better price and above all, they assure your customers satisfaction and good will!

We can give you many more reasons why we believe you can purchase more profitably from us and we earnestly ask that you consider us as the most logical and economical source of supply.

Write for samples and quotations.

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Disinfectants — Insecticides — Metal Polish — Dips — Oils — Sanitary Specialties

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Available in a wide range of sizes and colors.
Plain or labelled.
Your inquiries welcomed, large or small.

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Almost a Half Century in Cincinnati

Offer New Quaternary Disinfectant

A new odorless disinfectant, "Timsol," developed for sterilizing surgical instruments cold for the armed forces, is now available for civilian sanitation use, according to announcement by Theo. Ross & Associates, 835 W. Olympic Blvd., Los Angeles 15, Calif. Active ingredients are quaternary ammonium compounds. The product is being offered in the hotel, restaurant, hospital, school and other institutional fields.

Portable Demonstration Kit

Enoz Chemical Co., 2430 Indiana Ave., Chicago 16, Ill., has equipped its salesmen with a unique demonstration kit for showing prospective customers how its insecticides function. Resembling a small portable radio in size, the device has a glass window in one side of the box through which the observer can follow action of the insecticide on test insects.

Hollingshead Promotion Piece

"Chemicals Art Tools" is the title of a new promotional piece issued by the R. M. Hollingshead Corp., Camden, N. J., which features the advantages for institutional use of their line of furniture polishes, floor waxes, soaps, insecticides, disinfectants and other sanitary products.

Banner Issues Catalog

Banner Chemical Products Co., Newark 5, N. J., has released a 20-page booklet, "Banner Sanitary Chemicals," describing its line of soaps, polishes, waxes, insecticides, disinfectants, sweeping compounds, dishwashing compounds, deodorants, soap dispensers and other items.

Awards to Johnson, Wrisley

Printed material used by S. C. Johnson & Son, Inc., Eli Lilly & Co. and the Allen B. Wrisley Co. won awards in the recent 19th annual exhibition of the Chicago Society of Typographic Arts. The Johnson entry was a brochure, "Special Waxes for Industry." That for the Eli Lilly Co. was a folder, entitled "A Reliable Method," while the Wrisley company was honored by two selections, a maga-

zine advertisement promoting their "Spruce" line of toiletries, and the familiar "Olivilo" soap wrapper, designed by Robert Sidney Dickens.



To Distribute Midget Aerosols

A new company, Matco Products, Inc., Jersey City, N. J., has been former to handle the exclusive distribution of "Matco Midget Aerosol" dispensers, it was announced recently. These aerosol dispensers are described as "room-size" insecticides, containing five per cent DDT, plus one per cent pyrethrum. They are packed in a counter display box of one dozen cartons, each carton containing three dispensers. List price per carton of three is 57 cents, minimum retail price, three for 50 cents. An intensive advertising campaign scheduled for June, July and August to appear in Sunday newspaper magazine sections, full pages in color, plus black and white advertisements has been announced. Distribution will be through drug, department, grocery, hardware and syndicate stores.

Clifford F. Raye, formerly director and vice-president of Skol Co., Inc., Gallowhur Chemical Co. and Puratized, Inc., has been elected president of the new company.

Empire Chemical Co. Moves

Empire Chemical Co., 19 Rector St., New York, has moved to new and larger quarters at 21 West St., the company announced recently. The company specializes in the sale of such heavy chemicals as liquid chlorine and sodium bicarbonate.

Market New DDT Powder

Safeway Chemical Co., 5699 Walworth Ave., Cleveland 2, Ohio, is marketing a new patented flexi-cap applicator for DDT powder. By a touch of the finger on the rubber dome comprising the top of the can, the powder is distributed in a light coating. Retail price, 25 cents.

Natl. Wax Buy Building

National Wax Co., Chicago, has announced purchase of the four-story building at 1300 W. Division St., Chicago, which it has occupied for several years under lease. Extensive improvements will be started at once, J. M. Packel, president, stated.

Pittsburg Chemical Incorporates

Pittsburg Chemical Co., a partnership of 3100 E. 26th St., Los Angeles 23, has incorporated under the name of Eston Chemicals, Inc., it was announced recently. There has been no change in the management or general operations of the company, which manufactures insecticides, fumigants, refrigerants and other industrial chemicals. Head officers are A. M. Esberg, president, and G. S. Wheaton, executive vice-president.

Jemco Products in New Quarters

Jemco Products Co., janitor supply house, Baton Rouge, recently announced that they had moved into their own new building at 644 Saint Philip St. In connection with this development the company took a full page advertisement in the Baton Rouge *State Times* of Feb. 16. A large photograph of the new plant and a list of the sanitary products and janitor supplies handled by the company were featured in the advertisement.

Pyrethrum Board Chairman Dies

Commander F. J. Couldrey, chairman of the Kenya Pyrethrum Board, died on April 20 at Nakuru, Kenya Colony, British E. Africa, after an illness of three weeks. Commander Couldrey was one of four members of the Kenya Pyrethrum Board that visited the United States during July and August, last year.

SOAP WRAPPING MACHINE WANTED

Single or double wrapper for
laundry soap.

Box D-100



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PALE WOOD

ROSINS

They will help
the soapmaker
"stretch" his fats.

CROSBY CHEMICALS, INC.
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Fatty alcohols and synthetic detergents

for manufacturers and jobbers

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Rodent Seed, Ant Jelly, Arsenic,
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Red Squill, Derris Powder, and
other effective chemicals that do a
thorough job for the Pest Controller.
The quality of CERTOX products re-
mains unaffected by the national emer-
gency. Prices, too, are near normal.

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All CERTOX products are manufactured
according to exacting specifications
under personal supervision of
I. H. LUTTAN, B. S. A., Entomologist.

SPECIAL CONTRACT PRICES
Available to Cover your Annual Needs.

YORK CHEMICAL CO.

Suppliers of Complete Exterminating Chemicals.
424 West 18th Street, New York, N.Y.

Positions Wanted

Chemist: Man with five years experience in insecticides and fumigants, B.S. and M.A. eastern university, desires connection with manufacturer where training and background would be of value. Write Box 435, care of *Soap & Sanitary Chemicals*.

Superintendent Soap Maker with long experience on all kinds of soaps and soap products. Glycerine recovery, also experienced chemist. Good references. Pacific Coast preferred. Address Box 443, care of *Soap & Sanitary Chemicals*.

Sales Manager: Experienced in marketing high quality maintenance and sanitation specialty line. Established Ohio company excellent reputation. Fine opportunity for the right man. Give full details including training and handling of salesmen, age, present position, salary objective, etc., in first letter. Replies held confidential. Address Box 444 care of *Soap & Sanitary Chemicals*.

Miscellaneous

Wanted: Back issues of *Soap & Sanitary Chemicals*, December, 1942 and December, 1944. Wanted to complete bound volumes by insecticide manufacturer. Write to Box 438, care of *Soap & Sanitary Chemicals*.

For Sale: Approximately six thousand plain, fiber tubes, metal semi-perforated top, metal ring and plug, $2\frac{3}{8}$ " x 5-5/16". Sample and price upon request. THE F. C. STURTEVANT CO., 21-23 Mechanic St., Hartford 5, Connecticut.

If You Can Offer chemicals, oils and other materials used in the soap industry and would be interested in southern representation. Address Box 439, care of *Soap & Sanitary Chemicals*.

Large Metal Stamping Factory has entered janitor supply manufacturing field. Exclusive RUST-PROOF (cadmium-plated) dustpans and (FOLD-O-WAY) metal shelf are coming off the presses. Advice to manufacturer's representatives and janitor supply houses—write at once for distribution details to STEEL INDUSTRIES, Inc., 2324 W. Wabansia Avenue, Chicago 47, Illinois.

For Sale: Ferguson & Haas Automatic, Adjustable Soap wrapping machine; Jones Type "E" automatic toilet soap press with conveyors; Houchin 1200 lb. Power driven steel soap slabber; Houchin Power driven two-way cutting table; 5 Shriver, Sperry 12", 18", 24", 30" Iron Filter Presses; etc. Send for latest bulletin. Brill Equipment Company, 225 West 34th St., New York 1, N. Y.

Distributors Wanted: A nationally advertised powdered factory hand soap. Either as manufacturing agents or warehouse jobbers. Liberal commission and sales assistance. Territory open in middle west states, also Pennsylvania and Baltimore. Address Box 440 care of *Soap & Sanitary Chemicals*.

Broker contacting wholesale grocer chain and department stores would like to represent soap manufacturer in the Metropolitan area. 25 years' soap experience. Address Box 441, care of *Soap & Sanitary Chemicals*.

For Sale: Houchin "Empire State" Foot Press. Two Way Soap Cutting Table. Slabber. Soap Frames. Three Roll Water Cooled Mill 16" x 40". Stone Mills; Dryers; Mixers; Grinders; Filter Presses; Kettles & Tanks; Pumps; Ball Bearing Conveyor, etc. Send for our latest Bulletin. We buy your surplus equipment for cash. Stein Equipment Co., 426 Broome Street, New York 13, N. Y.

Floor Brushes: We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Company, Los Angeles, Cal.

Will Purchase Immediately — Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 442, care *Soap & Sanitary Chemicals*.

Free Advt. for Veterans

As a service to veterans seeking jobs in the soap, chemical, detergent and sanitary industry, *Soap & Sanitary Chemicals* will accept, without charge, classified advertising from World War II veterans seeking positions. Advertisements should reach this magazine before the 21st of the month preceding month of publication.

Ingham Heads Boston Bims

C. Ernest Ingham of Ingham & Co., Boston, was chosen chairman of the BIMS of Boston at a recent meeting to succeed Pete Niles of Fritzsche Brothers, Inc. Joseph Manning of the Allen B. Wrisley Co., Boston office, was elected to the Executive Committee. Ed E. Aldrich of United Drug was re-elected treasurer. Pete Niles, retiring chairman, was chosen an honorary member. Other members of the Executive Committee re-elected include C. M. Roper of Owens-Illinois Glass Co.; Herbert Stephens of American Lithographic Co.; Stephen W. Higgins of Dennison Mfg. Co.; and Frank Longlois of United Drug Co. Announcement was made that golf outings will be held in June, July and September, details to be given later.

SOAP HEARING

(From Page 42)

to enter into the industry. A 60,000 pound quota per annum plus this bonus use of 72,500 pounds per quarter after quota use, plus the various ex-quota use possibilities, would afford the newcomer an annual total volume of business of approximately \$100,000 to \$200,000 based on present prices of soap according to their anhydrous content and types of soap manufactured. The amount produced and the total volume of sales would be the newcomers' gamble in the business. My guess is that few of these newcomers would, in the first year, reach these production levels and it is highly improbable that all of them would fully consume the quota and bonus provided for them.

Is it reasonable to suppose that more than 50 firms would enter this industry and survive, and if they did, could they possibly consume, every one of them, their entire quota and bonus, which if they did, would amount to approximately 15 million pounds of fats and oils? At the same time, is it not also reasonable to suppose that some firms in the industry would cease operating, and the amount of fats and oils consumed by them should therefore be deducted from the newcomers' total?

The 25 million pounds of bonus fats and oils to be used by the established firms in the industry, plus this estimated 15 million pounds that might be used by the newcomers would amount to 40 million pounds or 2 per cent of the total consumption of fats and oils by the industry.

Do you not think that this simple and easy change written into the order would go a long way in meeting the present needs and requirements of the industry as a whole?

Yours very truly,
KRANICH SOAP CO., INC.
Herbert Kranich

HK/cr

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The modern concentrated chemical cleaner which quickly removes spots, stains and discolorations from lavatories, urinals, and toilet bowls. It also aids in removing unpleasant odors.

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INDEX TO ADVERTISERS

* For further details see announcement in 1945 SOAP BLUE BOOK

Agricultural Chemicals	68, 152	*Geigy Co.	107	Pensacola Municipal Advertising Board	86
Alsop Engineering Co.	74	*General Chemical Co.	19	*Per-Mo Products Co.	159
*American British Chemical Supplies	87	*General Drug Co.	2nd Cover	Philadelphia Quartz Co.	29
American Can Co.	66	*R. Gesell, Inc.	Apr.	*Pittsburgh Coal Carbonization Co.	Apr.
American Standard Mfg. Co.	Apr.	*Givaudan-Delawanna, Inc.	20, 21	*Pittsburgh Plate Glass Co.	
Anchor-Hocking Glass Corp.	15, 69	R. W. Greeff & Co.	158	Columbia Chemical Division.	115
Applied Research Labs.	171	A. Gross & Co.	63	*John Powell & Co.	91
*Aromatic Products, Inc.	4th Cover	Haag Laboratories	Apr.	*R. J. Prentiss & Co.	123
Armour & Co.	88	Hardesty, W. C., Co.	Apr.	*Proctor & Schwartz, Inc.	Apr.
*Associated Chemists, Inc.	120	Hercules Powder Co.	94, 95	Puro Co.	105
Attapulugus Clay Co.	121	Hochstadter Labs.	171	*Pylam Products Co.	174
Axton-Cross Co.	176	*Hooker Electrochemical Co.	67	Regal Chemical Corp.	116
*Baird & McGuire, Inc.	124	Hospital Management	108	*Reilly Tar & Chemical Co.	156
J. T. Baker Chem. Co.	109	*Houchin Machinery Co.	70	Edward Remus & Co.	88
Banner Chemical Products Co.	Apr.	House of Milo	18	Rex-Cleanwall Corp.	164
*Barrett Co.	162	H. D. Hudson Mfg. Co.	110	Rheem Mfg. Co.	12
Bendix Chemical Corp.	176	*Hysan Products Co.	9, 148	Rhodes Chemical Corp.	152
*Bobrick Mfg. Corp.	Apr.	Industrial Chemical Prods. Co.	Apr.	W. C. Ritchie & Co.	Apr.
*Bri-Test Products Corp.	166	Industrial Management Corp.	138	Robinson Wagner Co.	78
Bromm Chemical Co.	150	Industrial Raw Materials Corp.	177	*Rohm & Haas Co.	134
Buckingham Wax Co.	Apr.	Inland Steel Container Co.	82	A. H. Ross Co.	Apr.
Bush Aromatics	Apr.	*Innis, Speiden & Co.	Apr.	Rumford Chemical Works.	31
Can Manufacturers Institute.	93	Institutions Magazine	118, 119	Sanitary Soap Co.	26
Carbide & Carbon Chemicals Corp.	6	James Laboratories	171	*C. G. Sargent's Sons Corp.	76
R. E. Chapin Mfg. Wks.	Apr.	R. A. Jones & Co.	34	*Schimmel & Co.	56
Chemical & Process Mach. Corp.	178	Kamen Soap Products Co.	Apr.	F. E. Schundler & Co., Inc.	82
Chemical Mfg. & Dist. Co.	14	Karl Kiefer Machine Co.	72	Seaboard Distributors, Inc.	86
Chemical Service Co.	16	Kinetic Chemicals, Inc.	104	Seeley & Co.	174
Chemical Supply Co.	168	Kranich Soap Co.	Bet. 54, 55	Seil, Putt & Rusby.	171
John A. Chew, Inc.	176	H. Krevit & Co.	158	Shell Oil Co.	Apr.
Antoine Chiris Co.	Apr.	Kwik Products Co.	Apr.	Henry Simon, Ltd.	84
Cin-Made Corp.	168	Lancaster, Allwine & Rommel.	170	*Skinner & Sherman.	171
Cole Laboratories, Inc.	Apr.	Alan Porter Lee.	171	*Skotch Products Corp.	178
Compagnie Parento	Apr.	J. M. Lehmann Co.	Apr.	*Foster D. Snell.	173
Concord Chemical Co.	Apr.	C. W. Lenth.	171	*Solvay Sales Corp.	10, 3rd Cover
*Consolidated Products Co.	174	Lofstrand Co.	Apr.	Sparhawk Co.	64
Consumers Import Co.	168	Lowell Mfg. Co.	157	Sprayer Corp. of America.	136
*Continental Can Co.	50	*Geo. Lueders & Co.	Apr.	Standard Alcohol Co.	Apr.
Cornelius Products Co.	Apr.	MacKenzie Laboratories	164	Stillwell & Gladding.	Apr.
Cowles Detergent Co.	89	*Magnus, Mabey & Reynard, Inc.	92	*Stokes & Smith Co.	Apr.
Crosby Chemicals, Inc.	170	Maryland Glass Corp.	Feb.	Tech Soap Co.	160
A. De Swaan.	Apr.	M. & H. Laboratories.	154	Texas Soap Mfg. Co.	159
*Davies-Young Soap Co.	13	J. W. McCutcheon.	171	E. G. Thomssen	173
*Derris, Inc.	178	C. C. McDonnell.	171	*Tombarel Products Corp.	Apr.
*Diamond Alkali Co.		*McLaughlin Gormley King Co.	140	Tischler Biological Services.	173
Standard Silicate Division.	Apr.	Merck & Co.	Apr.	Triangle Package Machinery Co.	Apr.
Harry W. Dietert Co.	Apr.	Michel Export Co.	170	Trio Chemical Works.	176
*Dodge & Olcott Co.	17, 103	Miranol Chemical Co.	64	Twin City Shellac Co.	162
*Dow Chemical Co.	60	Mirvale Chem. Co.	174	Jos. Turner & Co.	Apr.
E. F. Drew & Co.	101	Monsanto Chemical Co.	4, 117	Ultra Chemical Works.	11
*P. R. Dreyer, Inc.	23	Moore Bros. Co.	84	*Uncle Sam Chemical Co.	160
*E. I. du Pont de Nemours & Co.		National Can Co.	96, 97	Ungerer & Co.	Front Cover
Facing 54, 98, 146		National Milling & Chemical Co.	154	Union Pacific Railroad	58
*Eastern Industries	48	Nat'l Sanitary Supply Assn.	30	U. S. Bottlers Mchy. Co.	78
Eavenson Chemical Co.	65	Wm. D. Neuberger Co.	Mar.	U. S. Industrial Chemicals, Inc.	Between 82, 83
Edco Corp.	99	*Newman Tallow & Soap Machinery Co.	172	*Van Ameringen-Haebler, Inc.	8, 142
Elite Labs.	171	N. Y. Dermatological Lab.	Apr.	R. T. Vanderbilt.	Apr.
Elkay Products Co.	177	*Niagara Alkali Co.	Bet. 54, 55	Van Pell Chemical & Supply Co.	173
Emery Industries	Apr.	Norda Essential Oil & Chemical Co.	25	*Velsicol Corp.	113
Emfo Corp.	171	Olsen Publishing Co.	32	War Assets Corp.	Apr.
Federal Tool Corp.	80	Onyx Oil & Chemical Co.	122	Wax & Rosin Products.	102
*Federal Varnish Co.	156	*Orbis Products Co.	130	*Welch, Holme & Clark Co.	80
*Felton Chemical Co.	33, 114	Oronite Chemical Co.	Mar.	*Westvac Chlorine Prods. Corp.	62
Filtrol Corp.	Apr.	Owens-Illinois Glass Co.	Mar.	*Whittaker, Clark & Daniels.	Apr.
*Firmenich & Co.	7	Peck's Products Co.	157	Wisconsin Alumni Res. Foundation	144
*Florasynt Laboratories	27	*S. B. Penick & Co.	111	*Wurster & Sanger, Inc.	173
Franklin Research Co.	112	*Pennsylvania Refining Co.	166	Wyandotte Chemicals Corp.	22
Fritzsch Brothers, Inc.	52	Pennsylvania Salt Mfg. Co.	Apr.	York Chemical Co.	180
*Fuld Brothers	3				
Gardner-Richardson Co.	100				

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Tale Ends

AN electronic soap dispenser which automatically squirts liquid soap when the user's hands break a light beam has been announced by General Electric Co. and the E. J. Scarry Co., says the Associated Press. But suppose that you ducked your head down near the wash bowl to rinse off your face,—and got a neat squirt of liquid soap in the eye! And what's more, we feel that a gadget so fully automatic as this should go all the way and also play music when in operation.

* * *

In answer to criticism of manufacturers for making toilet soap at the expense of their chip and laundry soap production, we pause to ask the very pertinent question: "Who wouldn't?" When ceiling prices and quotas clash, only a sentimentalist would avoid taking the obvious path and sentiment will not meet the payroll!

* * *

Recently, Charles Luckman, exec V.P. of Lever, told the National Wholesale Druggists Assn. at a meeting in Chicago that we are about to enter the most competitive period in American business and that it's about time we really trained a few salesmen, not just turn them loose for the customers to train. Judging from some of the boys fresh out of the Army who have called here recently,—and representing large organizations at that,—we say "Amen!"

* * *

Imagine *Drug Trade News* on its front page running a photo of a young lady in a drug store showing her leg all the way up to the elbow! Intrigued by such a journalistic display, we looked more closely,—and it was to illustrate a Jergens Twin Make-up contest in which nylons were the prizes, 4,640 pairs of them.

* * *

Have you seen the first issue of *Agricultural Chemicals*, the new monthly rag being published out of this office? All about agricultural insecticides, fungicides and weed killers. Exit mealy bugs and leaf hoppers from the pages of *Soap* from now on!

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